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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the Transport of Dangerous Goods
(Fifteenth session,
Geneva, 29 June-10 July 1998,
agenda item 8)

OTHER BUSINESS

Decisions adopted by the fourth meeting of the Conference of the Parties to the Basel Covention

Transmitted by the United Nations Environment Programme (UNEP)
(Secretariat of the Basel Convention (SBC))

1. The Secretariat has been requested by UNEP/SBC to bring the decisions adopted by the fourth meeting of the Conference of the Parties to the Basel Convention to the attention of the Sub-Committee. These decisions will be made available in other languages if available during the session.

2. The Secretariat reproduces hereafter the list of decisions and the text of decisions which may be of interest to the Sub-Committee.

DECISIONS ADOPTED BY THE FOURTH MEETING OF THE CONFERENCE OF THE PARTIES TO THE BASEL CONVENTION
Kuching, Malaysia, 23-27 February 1998

List of decisions

IV/1. Bilateral, multilateral and regional agreements or arrangements

IV/2. Guidance elements for bilateral, multilateral and regional agreements or arrangements

IV/3. Transmission of information

IV/4. Establishment of regional or subregional centres for training and technology transfer regarding the management of hazardous wastes and other wastes and the minimization of their generation

IV/5. Report of the Contracting Parties and signatories on the implementation of decision II/12

IV/6. Outcome of the work of the Technical Working Group on lists of wastes and the applicable procedure for their review or adjustment

IV/7. Implementation of decision III/1

IV/8. Decision regarding Annex VII

IV/9. Amendment and adoption of annexes to the Convention

IV/10. Training and seminars related to the Basel Convention

IV/11. Current and planned technical assistance activities including for the implementation of Agenda 21

IV/12. Illegal traffic in hazardous wastes and other wastes

IV/13. Competent authorities and focal points

IV/14. Instruction Manual

IV/15. Establishment of an Information Management System on Wastes (IMSW) of the Basel Convention

IV/16. Cooperation with United Nations bodies, specialized agencies and regional systems and organizations and others

IV/17. Cooperation between the Basel Convention and the activities undertaken at the global level leading to the development of the legally binding instruments for the application of the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade and on persistent organic pollutants

IV/18. Hazardous waste minimization

IV/19. Ad Hoc Committee of Legal and Technical Experts to Consider and Develop a Draft Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and Their Disposal

IV/20. Emergency fund

IV/21. Monitoring the implementation of and compliance with the obligations set out by the Basel Convention

IV/22. Institutional, financial and procedural arrangements

IV/23. Draft Technical Guidelines on Hazardous Waste: Physico-chemical Treatment (D9) and Biological Treatment (D8)

IV/24. Proposed work programme of the Technical Working Group for 1998 and 1999-2000

IV/25. Tribute to the host country and dates and venue for the next meeting of the Conference of the Parties

Decisions adopted by the fourth meeting of the Conference of the Parties to the Basel Convention

IV/6. Outcome of the work of the Technical Working Group on lists of wastes and the applicable procedure for their review or adjustment

The Conference

1. Notes with appreciation the efforts of the Technical Working Group in preparing the List A and List B of wastes;

2. Considers the draft Position Paper together with the consolidated Lists A and B of wastes, and the applicable procedure for reviewing or adjusting List A and List B;

3. Agrees to approve the draft Position Paper on Hazard Characterization and Classification of Wastes within the Framework of the Basel Convention as contained in document UNEP/CHW.4/2;

4. Approves the List A and List B of wastes as submitted by the Technical Working Group;

5. Approves the Application Form for the Placement or Removal of Wastes on List A or List B developed by the Technical Working Group;

6. Extends the mandate of the Technical Working Group and instructs the Technical Working Group to keep the List A and List B of wastes under review using the Application Form for placement or removal of wastes on these Lists for this purpose;

7. Requests the Technical Working Group to provide the Conference of the Parties with recommendations on the revision or adjustment of List A and List B of wastes;

8. Notes the wastes placed on List C;

9. Instructs the Technical Working Group to review wastes on List C with a view to their placement on List A or List B;

10. Also instructs the Technical Working Group to initiate work on wastes about which particular concerns are or have been expressed;

11. Instructs the Technical Working Group to develop the procedure for reviewing or adjusting the lists of wastes and to submit a proposal for approval at the fifth meeting of the Conference of the Parties;

12. Requests the Technical Working Group to continue its work on the hazard characterization of wastes, in particular, for the hazard characteristics H6.2, H10, H11, H12 and H13 of Annex III to the Convention;

13. Requests the Secretariat to publish the draft position paper, in the official languages of the United Nations, and to disseminate it to Parties, signatories of the Convention, other States, intergovernmental organizations, industry and business, as well as to environmental non-governmental organizations;

14. Requests the Secretariat of the Basel Convention to ensure that the outcome of the work of the Technical Working Group be made available to Parties on a regular basis.

IV/7. Implementation of decision III/1

The Conference

1. Takes note of the progress made by Parties in effectively implementing decision III/1;

2. Welcomes the ratification by several countries of the Amendment adopted by decision III/1;

3. Strongly appeals to Parties to ratify the Amendment adopted by decision III/1 as soon as possible to enable the early entry into force of the Amendment.

IV/9. Amendment and adoption of annexes to the Convention

The Conference,

Recalling decision III/1 of the Conference of the Parties, which instructed the Technical Working Group, among other things, to give full priority to completing the work on hazard characterization and the development of lists, in order to submit them for approval to the fourth meeting of the Conference of the Parties,

Recalling decision III/12 of the Conference of the Parties, which instructed the Technical Working Group, among other things, to consider ways of taking forward the development of lists of hazardous wastes and the applicable procedure for their review based on the outcome of the work of the Technical Working Group, as well as further developing lists of wastes not covered by this Convention,

Taking note of the work carried out by the Technical Working Group and in particular the development of a list of wastes that are characterized as hazardous pursuant to Article 1, paragraph 1 (a), (list A contained in the note on consolidated lists of wastes and the applicable procedures for their review and adjustment (UNEP/CHW.4/3)) and a list of wastes that are not covered by article 1, paragraph 1 (a), of this Convention (list B contained in the note on consolidated lists of wastes and the applicable procedures for their review and adjustment), as well as the progress made in the development of a procedure for reviewing or adjusting these lists and of an application form required for the placement or removal of wastes on these lists,

Considering that Annex I and Annex III shall remain the factors to characterize wastes as hazardous for the purpose of this Convention, that lists A and B developed by the Technical Working Group provide an expeditious way to facilitate the implementation of this Convention, including Article 4A, by establishing wastes that are and wastes that are not covered by Article 1, paragraph 1 (a), of this Convention, and that these lists should have equal status,

Noting that wastes listed in lists A and B are an elaboration and clarification of the provisions of Article 1, paragraph 1 (a), of this Convention by reference to Annexes I and III,

Recognizing that List A and List B are not intended to be exhaustive,

Taking note that the Open-ended Ad Hoc Committee decided at its third meeting to propose that the Conference of the Parties extend the mandate of the Technical Working Group to take charge of the procedure for reviewing or adjusting the lists of wastes and that the Conference of the Parties adopt the application form for this purpose, as set out in the note on consolidated lists of wastes and the applicable procedures for their review and adjustment,

Taking note that, pursuant to decision IV/6, the Technical Working Group is instructed to keep the lists of wastes under review and to make recommendations to the Conference of the Parties for revisions or adjustments,

Further taking note that, pursuant to decision IV/6, the Technical Working Group is instructed to review the procedure for reviewing or adjusting the lists of wastes, including the Application Form as set out in the note on consolidated lists of wastes and the applicable procedures for their review and adjustment and to submit a proposal for approval at the fifth meeting of the Conference of the Parties,

Decides to adopt the following amendment and adoption of annexes to this Convention:

1. Add the following paragraphs at the end of Annex I:

(a) To facilitate the application of this Convention, and subject to paragraphs (b), (c) and (d), wastes listed in Annex VIII are characterized as hazardous pursuant to Article 1, paragraph 1 (a), of this Convention, and wastes listed in Annex IX are not covered by Article 1, paragraph 1 (a), of this Convention.

(b) Designation of a waste on Annex VIII does not preclude, in a particular case, the use of Annex III to demonstrate that a waste is not hazardous pursuant to Article 1, paragraph 1 (a), of this Convention.

(c) Designation of a waste on Annex IX does not preclude, in a particular case, characterization of such a waste as hazardous pursuant to Article 1, paragraph 1 (a), of this Convention if it contains Annex I material to an extent causing it to exhibit an Annex III characteristic.

(d) Annexes VIII and IX do not affect the application of Article 1, paragraph 1 (a), of this Convention for the purpose of characterization of wastes.

2. Add the following two new annexes to the Convention as its Annexes VIII and IX.

Annex VIII

LIST A

Wastes contained in this Annex are characterized as hazardous under Article 1, paragraph 1 (a), of this Convention, and their designation on this Annex does not preclude the use of Annex III to demonstrate that a waste is not hazardous.

A1 Metal and metal-bearing wastes

A1010 Metal wastes and waste consisting of alloys of any of the following:

- Antimony
- Arsenic
- Beryllium
- Cadmium
- Lead
- Mercury
- Selenium
- Tellurium
- Thallium

but excluding such wastes specifically listed on list B.

A1020 Waste having as constituents or contaminants, excluding metal waste in massive form, any of the following:

- Antimony; antimony compounds
- Beryllium; beryllium compounds
- Cadmium; cadmium compounds
- Lead; lead compounds
- Selenium; selenium compounds
- Tellurium; tellurium compounds

A1030 Wastes having as constituents or contaminants any of the following:

- Arsenic; arsenic compounds
- Mercury; mercury compounds.
- Thallium; thallium compounds

A1040 Wastes having as constituents any of the following:

- Metal carbonyls
- Hexavalent chromium compounds

A1050 Galvanic sludges

A1060 Waste liquors from the pickling of metals

A1070 Leaching residues from zinc processing, dust and sludges such as jarosite, hematite, etc.

A1080	Waste zinc residues not included on list B, containing lead and cadmium in concentrations sufficient to exhibit Annex III characteristics
A1090	Ashes from the incineration of insulated copper wire
A1100	Dusts and residues from gas cleaning systems of copper smelters
A1110	Spent electrolytic solutions from copper electrorefining and electrowinning operations
A1120	Waste sludges, excluding anode slimes, from electrolyte purification systems in copper electrorefining and electrowinning operations
A1130	Spent etching solutions containing dissolved copper
A1140	Waste cupric chloride and copper cyanide catalysts
A1150	Precious metal ash from incineration of printed circuit boards not included on list B 1/
A1160	Waste lead-acid batteries, whole or crushed
A1170	Unsorted waste batteries excluding mixtures of only list B batteries. Waste batteries not specified on list B containing Annex I constituents to an extent to render them hazardous.
A1180	Waste electrical and electronic assemblies or scrap 2/ containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they possess any of the characteristics contained in Annex III (note the related entry on list B B1110) 3/

A2 Wastes containing principally inorganic constituents, which may contain metals and organic materials

A2010	Glass waste from cathode-ray tubes and other activated glasses
A2020	Waste inorganic fluorine compounds in the form of liquids or sludges but excluding such wastes specified on list B
A2030	Waste catalysts but excluding such wastes specified on list B
A2040	Waste gypsum arising from chemical industry processes, when containing Annex I constituents to the extent that it exhibits an Annex III hazardous characteristic (note the related entry on list B B2080)
A2050	Waste asbestos (dusts and fibres)

1/ Note that mirror entry on list B (B1160) does not specify exceptions.

2/ This entry does not include scrap assemblies from electric power generation.

3/ PCBs are at a concentration level of 50 mg/kg or more.

A2060	Coal-fired power plant fly-ash containing Annex I substances in concentrations sufficient to exhibit Annex III characteristics (note the related entry on list B B2050)

A3 Wastes containing principally organic constituents, which may contain metals and inorganic materials

A3010	Waste from the production or processing of petroleum coke and bitumen
A3020	Waste mineral oils unfit for their originally intended use
A3030	Wastes that contain, consist of or are contaminated with leaded anti-knock compound sludges
A3040	Waste thermal (heat transfer) fluids
A3050	Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives excluding such wastes specified on list B (note the related entry on list B B4020)
A3060	Waste nitrocellulose
A3070	Waste phenols, phenol compounds including chlorophenol in the form of liquids or sludges
A3080	Waste ethers not including those specified on list B
A3090	Waste leather dust, ash, sludges and flours when containing hexavalent chromium compounds or biocides (note the related entry on list B B3100)
A3100	Waste paring and other waste of leather or of composition leather not suitable for the manufacture of leather articles containing hexavalent chromium compounds or biocides (note the related entry on list B B3090)
A3110	Fellmongery wastes containing hexavalent chromium compounds or biocides or infectious substances (note the related entry on list B B3110)
A3120	Fluff - light fraction from shredding
A3130	Waste organic phosphorous compounds
A3140	Waste non-halogenated organic solvents but excluding such wastes specified on list B
A3150	Waste halogenated organic solvents
A3160	Waste halogenated or unhalogenated non-aqueous distillation residues arising from organic solvent recovery operations
A3170	Wastes arising from the production of aliphatic halogenated hydrocarbons (such as chloromethane, dichloro-ethane, vinyl chloride, vinylidene chloride, allyl chloride and epichlorhydrin)

A3180 Wastes, substances and articles containing, consisting of or contaminated with polychlorinated biphenyl (PCB), polychlorinated terphenyl (PCT), polychlorinated naphthalene (PCN) or polybrominated biphenyl (PBB), or any other polybrominated analogues of these compounds, at a concentration level of 50 mg/kg or more 4/

A3190 Waste tarry residues (excluding asphalt cements) arising from refining, distillation and any pyrolitic treatment of organic materials

A4 Wastes which may contain either inorganic or organic constituents

A4010 Wastes from the production, preparation and use of pharmaceutical products but excluding such wastes specified on list B

A4020 Clinical and related wastes; that is wastes arising from medical, nursing, dental, veterinary, or similar practices, and wastes generated in hospitals or other facilities during the investigation or treatment of patients, or research projects

A4030 Wastes from the production, formulation and use of biocides and phytopharmaceuticals, including waste pesticides and herbicides which are off-specification, outdated, 5/ or unfit for their originally intended use

A4040 Wastes from the manufacture, formulation and use of wood-preserving chemicals 6/

A4050 Wastes that contain, consist of or are contaminated with any of the following:

- Inorganic cyanides, excepting precious-metal-bearing residues in solid form containing traces of inorganic cyanides
- Organic cyanides

A4060 Waste oils/water, hydrocarbons/water mixtures, emulsions

A4070 Wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish excluding any such waste specified on list B (note the related entry on list B B4010)

A4080 Wastes of an explosive nature (but excluding such wastes specified on list B)

A4090 Waste acidic or basic solutions, other than those specified in the corresponding entry on list B (note the related entry on list B B2120)

A4100 Wastes from industrial pollution control devices for cleaning of industrial off-gases but excluding such wastes specified on list B

4/ The 50 mg/kg level is considered to be an internationally practical level for all wastes. However, many individual countries have established lower regulatory levels (e.g., 20 mg/kg) for specific wastes.

5/ "Outdated" means unused within the period recommended by the manufacturer.

6/ This entry does not include wood treated with wood preserving chemicals.

A4110	Wastes that contain, consist of or are contaminated with any of the following:
	• Any congenor of polychlorinated dibenzo-furan
	• Any congenor of polychlorinated dibenzo-dioxin
A4120	Wastes that contain, consist of or are contaminated with peroxides
A4130	Waste packages and containers containing Annex I substances in concentrations sufficient to exhibit Annex III hazard characteristics
A4140	Waste consisting of or containing off specification or outdated 7/ chemicals corresponding to Annex I categories and exhibiting Annex III hazard characteristics
A4150	Waste chemical substances arising from research and development or teaching activities which are not identified and/or are new and whose effects on human health and/or the environment are not known
A4160	Spent activated carbon not included on list B (note the related entry on list B B2060)

7/ "Outdated" means unused within the period recommended by the manufacturer.

Annex IX

LIST B

Wastes contained in the Annex will not be wastes covered by Article 1, paragraph 1 (a), of this Convention unless they contain Annex I material to an extent causing them to exhibit an Annex III characteristic.

B1 Metal and metal-bearing wastes

B1010 Metal and metal-alloy wastes in metallic, non-dispersible form:

- Precious metals (gold, silver, the platinum group, but not mercury)
- Iron and steel scrap
- Copper scrap
- Nickel scrap
- Aluminium scrap
- Zinc scrap
- Tin scrap
- Tungsten scrap
- Molybdenum scrap
- Tantalum scrap
- Magnesium scrap
- Cobalt scrap
- Bismuth scrap
- Titanium scrap
- Zirconium scrap
- Manganese scrap
- Germanium scrap
- Vanadium scrap
- Scrap of hafnium, indium, niobium, rhenium and gallium
- Thorium scrap
- Rare earths scrap

B1020 Clean, uncontaminated metal scrap, including alloys, in bulk finished form (sheet, plate, beams, rods, etc), of:

- Antimony scrap
- Beryllium scrap
- Cadmium scrap
- Lead scrap (but excluding lead-acid batteries)
- Selenium scrap
- Tellurium scrap

B1030 Refractory metals containing residues

B1040 Scrap assemblies from electrical power generation not contaminated with lubricating oil, PCB or PCT to an extent to render them hazardous

B1050 Mixed non-ferrous metal, heavy fraction scrap, not containing Annex I materials in concentrations sufficient to exhibit Annex III characteristics 8/

B1060 Waste selenium and tellurium in metallic elemental form including powder

B1070 Waste of copper and copper alloys in dispersible form, unless they contain Annex I constituents to an extent that they exhibit Annex III characteristics

B1080 Zinc ash and residues including zinc alloys residues in dispersible form unless containing Annex I constituents in concentration such as to exhibit Annex III characteristics or exhibiting hazard characteristic H4.3 9/

B1090 Waste batteries conforming to a specification, excluding those made with lead, cadmium or mercury

B1100 Metal-bearing wastes arising from melting, smelting and refining of metals:

- Hard zinc spelter
- Zinc-containing drosses:
  - Galvanizing slab zinc top dross (>90% Zn)
  - Galvanizing slab zinc bottom dross (>92% Zn)
  - Zinc die casting dross (>85% Zn)
  - Hot dip galvanizers slab zinc dross (batch)(>92% Zn)
  - Zinc skimmings
- Aluminium skimmings (or skims) excluding salt slag
- Slags from copper processing for further processing or refining not containing arsenic, lead or cadmium to an extend that they exhibit Annex III hazard characteristics
- Wastes of refractory linings, including crucibles, originating from copper smelting
- Slags from precious metals processing for further refining
- Tantalum-bearing tin slags with less than 0.5% tin

B1110 Electrical and electronic assemblies:

- Electronic assemblies consisting only of metals or alloys
- Waste electrical and electronic assemblies or scrap 10/ (including printed circuit boards) not containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or not contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) or from which these have been removed, to an extent that they

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8/ Note that even where low level contamination with Annex I materials initially exists, subsequent processes, including recycling processes, may result in separated fractions containing significantly enhanced concentrations of those Annex I materials.

9/ The status of zinc ash is currently under review and there is a recommendation with the United Nations Conference on Trade and Development (UNCTAD) that zinc ashes should not be dangerous goods.

10/ This entry does not include scrap from electrical power generation.

do not possess any of the characteristics contained in Annex III (note the related entry on list A A1180)

- Electrical and electronic assemblies (including printed circuit boards, electronic components and wires) destined for direct reuse, 11/ and not for recycling or final disposal 12/

B1120 Spent catalysts excluding liquids used as catalysts, containing any of:

Transition metals, excluding waste catalysts (spent catalysts, liquid used catalysts or other catalysts) on list A:	Scandium	Titanium
	Vanadium	Chromium
	Manganese	Iron
	Cobalt	Nickel
	Copper	Zinc
	Yttrium	Zirconium
	Niobium	Molybdenum
	Hafnium	Tantalum
	Tungsten	Rhenium
Lanthanides (rare earth metals):	Lanthanum	Cerium
	Praseodymium	Neody
	Samarium	Europium
	Gadolinium	Terbium
	Dysprosium	Holmium
	Erbium	Thulium
	Ytterbium	Lutetium

B1130 Cleaned spent precious-metal-bearing catalysts

B1140 Precious-metal-bearing residues in solid form which contain traces of inorganic cyanides

B1150 Precious metals and alloy wastes (gold, silver, the platinum group, but not mercury) in a dispersible, non-liquid form with appropriate packaging and labelling

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11/ Reuse can include repair, refurbishment or upgrading, but not major reassembly.

12/ In some countries these materials destined for direct re-use are not considered wastes.

B1160 Precious-metal ash from the incineration of printed circuit boards (note the related entry on list A A1150)

B1170 Precious-metal ash from the incineration of photographic film

B1180 Waste photographic film containing silver halides and metallic silver

B1190 Waste photographic paper containing silver halides and metallic silver

B1200 Granulated slag arising from the manufacture of iron and steel

B1210 Slag arising from the manufacture of iron and steel including slags as a source of TiO_2 and vanadium

B1220 Slag from zinc production, chemically stabilized, having a high iron content (above 20%) and processed according to industrial specifications (e.g., DIN 4301) mainly for construction

B1230 Mill scaling arising from the manufacture of iron and steel

B1240 Copper oxide mill-scale

B2 Wastes containing principally inorganic constituents, which may contain metals and organic materials

B2010 Wastes from mining operations in non-dispersible form:

- Natural graphite waste
- Slate waste, whether or not roughly trimmed or merely cut, by sawing or otherwise
- Mica waste
- Leucite, nepheline and nepheline syenite waste
- Feldspar waste
- Fluorspar waste
- Silica wastes in solid form excluding those used in foundry operations

B2020 Glass waste in non-dispersible form:

- Cullet and other waste and scrap of glass except for glass from cathode-ray tubes and other activated glasses

B2030 Ceramic wastes in non-dispersible form:

- Cermet wastes and scrap (metal ceramic composites)
- Ceramic based fibres not elsewhere specified or included

B2040 Other wastes containing principally inorganic constituents:

- Partially refined calcium sulphate produced from flue-gas desulphurization (FGD)
- Waste gypsum wallboard or plasterboard arising from the demolition of buildings
- Slag from copper production, chemically stabilized, having a high iron content (above 20%) and processed according to industrial specifications (e.g., DIN 4301 and DIN 8201) mainly for construction and abrasive applications
- Sulphur in solid form
- Limestone from the production of calcium cyanamide (having a pH less than 9)
- Sodium, potassium, calcium chlorides

- Carborundum (silicon carbide)
- Broken concrete
- Lithium-tantalum and lithium-niobium containing glass scraps

B2050 Coal-fired power plant fly-ash, not included on list A (note the related entry on list A A2060)

B2060 Spent activated carbon resulting from the treatment of potable water and processes of the food industry and vitamin production (note the related entry on list A A4160)

B2070 Calcium fluoride sludge

B2080 Waste gypsum arising from chemical industry processes not included on list A (note the related entry on list A A2040)

B2090 Waste anode butts from steel or aluminium production made of petroleum coke or bitumen and cleaned to normal industry specifications (excluding anode butts from chlor alkali electrolyses and from metallurgical industry)

B2100 Waste hydrates of aluminium and waste alumina and residues from alumina production excluding such materials used for gas cleaning, flocculation or filtration processes

B2110 Bauxite residue ("red mud") (pH moderated to less than 11.5)

B2120 Waste acidic or basic solutions with a pH greater than 2 and less than 11.5, which are not corrosive or otherwise hazardous (note the related entry on list A A4090)

B3 Wastes containing principally organic constituents, which may contain metals and inorganic materials

B3010 Solid plastic waste:

The following plastic or mixed plastic materials, provided they are not mixed with other wastes and are prepared to a specification:

- Scrap plastic of non-halogenated polymers and co-polymers, including but not limited to the following 13/:

  - ethylene
  - styrene
  - polypropylene
  - polyethylene terephthalate
  - acrylonitrile
  - butadiene
  - polyacetals
  - polyamides
  - polybutylene terephthalate
  - polycarbonates
  - polyethers
  - polyphenylene sulphides
  - acrylic polymers
  - alkanes C10-C13 (plasticiser)

13/ It is understood that such scraps are completely polymerized.

- polyurethane (not containing CFCs)
- polysiloxanes
- polymethyl methacrylate
- polyvinyl alcohol
- polyvinyl butyral
- polyvinyl acetate

• Cured waste resins or condensation products including the following:

- urea formaldehyde resins
- phenol formaldehyde resins
- melamine formaldehyde resins
- epoxy resins
- alkyd resins
- polyamides

• The following fluorinated polymer wastes 14/

- perfluoroethylene/propylene (FEP)
- perfluoroalkoxy alkane (PFA)
- perfluoroalkoxy alkane (MFA)
- polyvinylfluoride (PVF)
- polyvinylidenefluoride (PVDF)

B3020 Paper, paperboard and paper product wastes

The following materials, provided they are not mixed with hazardous wastes:

Waste and scrap of paper or paperboard of:

- unbleached paper or paperboard or of corrugated paper or paperboard
- other paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass
- paper or paperboard made mainly of mechanical pulp (for example, newspapers, journals and similar printed matter)
- other, including but not limited to 1) laminated paperboard 2) unsorted scrap.

14/ - Post-consumer wastes are excluded from this entry
- Wastes shall not be mixed
- Problems arising from open-burning practices to be considered

B3030 Textile wastes

The following materials, provided they are not mixed with other wastes and are prepared to a specification:

- Silk waste (including cocoons unsuitable for reeling, yarn waste and garnetted stock)
  - not carded or combed
  - other
- Waste of wool or of fine or coarse animal hair, including yarn waste but excluding garnetted stock
  - noils of wool or of fine animal hair
  - other waste of wool or of fine animal hair
  - waste of coarse animal hair
- Cotton waste (including yarn waste and garnetted stock)
  - yarn waste (including thread waste)
  - garnetted stock
  - other
- Flax tow and waste
- Tow and waste (including yarn waste and garnetted stock) of true hemp (Cannabis sativa L.)
- Tow and waste (including yarn waste and garnetted stock) of jute and other textile bast fibres (excluding flax, true hemp and ramie)
- Tow and waste (including yarn waste and garnetted stock) of sisal and other textile fibres of the genus Agave
- Tow, noils and waste (including yarn waste and garnetted stock) of coconut
- Tow, noils and waste (including yarn waste and garnetted stock) of abaca (Manila hemp or Musa textilis Nee)
- Tow, noils and waste (including yarn waste and garnetted stock) of ramie and other vegetable textile fibres, not elsewhere specified or included
- Waste (including noils, yarn waste and garnetted stock) of man-made fibres
  - of synthetic fibres
  - of artificial fibres
- Worn clothing and other worn textile articles
- Used rags, scrap twine, cordage, rope and cables and worn out articles of twine, cordage, rope or cables of textile materials
  - sorted
  - other

B3040 Rubber wastes

The following materials, provided they are not mixed with other wastes:

- Waste and scrap of hard rubber (e.g., ebonite)
- Other rubber wastes (excluding such wastes specified elsewhere)

B3050 Untreated cork and wood waste:

- Wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms
- Cork waste: crushed, granulated or ground cork

B3060 Wastes arising from agro-food industries provided it is not infectious:

- Wine lees
- Dried and sterilized vegetable waste, residues and byproducts, whether or not in the form of pellets, of a kind used in animal feeding, not elsewhere specified or included
- Degras: residues resulting from the treatment of fatty substances or animal or vegetable waxes
- Waste of bones and horn-cores, unworked, defatted, simply prepared (but not cut to shape), treated with acid or degelatinised
- Fish waste
- Cocoa shells, husks, skins and other cocoa waste
- Other wastes from the agro-food industry excluding by-products which meet national and international requirements and standards for human or animal consumption

B3070 The following wastes:

- Waste of human hair
- Waste straw
- Deactivated fungus mycelium from penicillin production to be used as animal feed

B3080 Waste parings and scrap of rubber

B3090 Paring and other wastes of leather or of composition leather not suitable for the manufacture of leather articles, excluding leather sludges, not containing hexavalent chromium compounds and biocides (note the related entry on list A A3100)

B3100 Leather dust, ash, sludges or flours not containing hexavalent chromium compounds or biocides (note the related entry on list A A3090)

B3110 Fellmongery wastes not containing hexavalent chromium compounds or biocides or infectious substances (note the related entry on list A A3110)

B3120 Wastes consisting of food dyes

B3130 Waste polymer ethers and waste non-hazardous monomer ethers incapable of forming peroxides

B3140 Waste pneumatic tyres, excluding those destined for Annex IVA operations

B4 Wastes which may contain either inorganic or organic constituents

B4010 Wastes consisting mainly of water-based/latex paints, inks and hardened varnishes not containing organic solvents, heavy metals or biocides to an extent to render them hazardous (note the related entry on list A A4070)

B4020 Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives, not listed on list A, free of solvents and other contaminants to an extent that they do not exhibit Annex III characteristics, e.g., water-based, or glues based on casein starch, dextrin, cellulose ethers, polyvinyl alcohols (note the related entry on list A A3050)

B4030 Used single-use cameras, with batteries not included on list A

IV/12. Illegal traffic in hazardous wastes and other wastes

The Conference

1. Welcomes the work of the Technical Working Group on confirmed cases of illegal traffic and recognizes that the issue of illegal traffic remains a high priority with particular emphasis on cases involving alleged illegal traffic,

(a) Appeals to Parties to bring any case or, if appropriate, alleged case of illegal traffic to the attention of the Secretariat and to provide the Secretariat with all necessary information to enable it to take any appropriate action, including preventive measures through initial dissemination of information to Parties concerned,

(b) Welcomes steps taken by Parties to submit information on how Parties may have dealt with illegal traffic, including alleged cases of illegal traffic, with regard to difficulties they could be facing when seeking compliance with the provisions of the Basel Convention,

(c) Recognizes that illegal traffic can take many different forms and be of different magnitudes ranging from, for example, falsification of documents to large-scale organized activities,

(d) Requests Parties to cooperate with each other and the Secretariat on alleged cases of illegal traffic;

(e) Assigns the Consultative Sub-group of Legal and Technical Experts the task of developing procedures to address alleged cases of illegal traffic;

(f) Adopts the draft Form for Confirmed Cases of Illegal Traffic for use by Parties in confirmed cases of illegal traffic;

(g) Invites Parties to use this form in their reports related to confirmed cases of illegal traffic to the Secretariat;

(h) Requests the Secretariat to report to the fifth meeting of the Conference of the Parties, through the Open-ended Ad Hoc Committee for the Implementation of the Basel Convention, as appropriate, on information received by Parties on cases of illegal traffic;

2. Welcomes the convening of meetings and conferences on the prevention of illegal traffic approved by decision III/28 and urges Parties to promote the effective participation of developing countries in these meetings;

3. Urges Parties to fulfil their obligations under Article 9, paragraph 5 of the Basel Convention, in particular:

(a) To promulgate, update and/or develop stringent legislation on the control of transboundary movements of hazardous wastes; and

(b) To incorporate in their national legislation appropriate sanctions or penalties for illegal traffic in hazardous wastes and other wastes covered by the Basel Convention;

4. (a) Notes that the classification and characterization of wastes represent essential tools to assist in the identification and prevention of illegal traffic;

(b) Requests the Secretariat of the Basel Convention, bearing in mind decisions I/18 and II/23, to work closely with the United Nations Committee of Experts on the Transport of Dangerous Goods towards the development of an appropriate classification and labelling system;

(c) Requests the Secretariat to continue its cooperation with various regional commissions and secretariats of regional conventions and protocols, non-governmental organizations, industry and the private sector, as well as the World Customs Organization and Interpol, in order to achieve better control and monitoring of cases or alleged cases of illegal traffic in hazardous wastes and other wastes;

(d) Requests the Secretariat to organize training courses for customs officers and police forces in cooperation with the World Customs Organization, Interpol and other appropriate bodies, including United Nations regional commissions and secretariats of regional agreements dealing with similar aspects;

(e) Requests the Secretariat to assist Parties in capacity building, including the development of an appropriate infrastructure, with a view to preventing and penalizing cases of illegal traffic in hazardous wastes and other wastes and to ensuring the involvement of national authorities and focal points for the Basel Convention in the prevention and monitoring of illegal traffic in hazardous wastes and other wastes;

(f) Encourages Parties to build up their enforcement capacities, inter alia, through cooperation with international bodies such as Interpol and the International Network for Environmental Complaints, in the development of training and networking for enforcement personnel involved in the prevention of illegal traffic;

(g) Invites Parties to promote consistency when addressing the issue of illegal traffic in the relevant United Nations bodies, while avoiding duplication;

5. Requests the Technical Working Group and the Consultative Sub-group of Legal and Technical Experts, at their joint meeting, keeping in mind the discussions within the Ad Hoc Working Group of Legal and Technical Experts to Consider and Develop a Draft Protocol on Liability and Compensation, to develop recommended procedures to assist Parties in preventing, identifying and managing illegal traffic.

IV/14. Instruction Manual

The Conference

1. Takes note of the revised Instruction Manual on the control system for transboundary movements of hazardous wastes and other wastes;

2. Welcomes the technical assistance provided by Finland in the preparation of the Instruction Manual;

3. Approves the Instruction Manual and its accompanying Notification and Movement Document;

4. Requests the Secretariat of the Basel Convention to publish the Instruction Manual in all United Nations languages and to disseminate it widely;

5. Invites Parties to use the Instruction Manual and the forms contained therein and report to the Secretariat on their experience in the use of the Instruction Manual and the forms, in particular in cases where difficulties occur in their use.

IV/15. Establishment of an Information Management System on Wastes (IMSW) of the Basel Convention

The Conference

1. Takes note of progress reported on the establishment and development of an Information Management System on Wastes (IMSW) under the Basel Convention;

2. Welcomes the support from the Government of Japan for the establishment of the IMSW;

3. Also urges the Secretariat of the Basel Convention to develop further and promote access to the IMSW through the Internet, including information and documentation on information received in relation to Articles 13 and 16, as well as documentation on and reports of Basel Convention meetings, newsletters and publications, etc.;

4. Requests the Secretariat to work closely with other United Nations bodies, in particular the United Nations Environment Programme, that are developing or operating databases or information management systems of relevance to the Basel Convention.

IV/16. Cooperation with United Nations bodies, specialized agencies and regional systems and organizations and others

The Conference

I. 1. Takes note of the activities undertaken by the Secretariat of the Basel Convention to cooperate with key organizations of the United Nations system, regional conventions and commissions, other conventions and intergovernmental bodies, as well as with non-governmental organizations and the private sector, including industry;

2. Requests the Secretariat further to consolidate its cooperation on critical areas for the implementation of the Basel Convention with relevant United Nations bodies and specialized agencies, including the International Atomic Energy Agency and the United Nations Environment Programme Industry and Environment Centre, other intergovernmental organizations, regional conventions and commissions, as well as with non-governmental organizations and the private sector, including industry;

II. World Customs Organization

1. Takes note of the activities undertaken by the Secretariat of the Basel Convention, under the guidance of the Technical Working Group, to cooperate with the World Customs Organization in identifying hazardous wastes separately in the Harmonized Commodity Description and Coding System;

2. Further takes note that the Harmonized System Committee at its seventeenth session (May 1996) provisionally adopted a number of amendments to the Harmonized System nomenclature concerning separate identification of certain categories of wastes based on proposals of the Secretariat of the Basel Convention, the Organisation for Economic Cooperation and Development and the European Commission. These amendments are expected to come into force on 1 January 2002;

3. Urges the World Customs Organization to accord priority to evolving the Harmonized Commodity Description and Coding System;

4. Also takes note that the deadline established by the Harmonized System Committee for the submission of new proposals for the separate identification of wastes covered by the Basel Convention in the Harmonized System nomenclature for the next Harmonized System amendments, to be implemented as from 1 January 2002, is the end of 1997;

5. Requests the Secretariat under the guidance of the Technical Working Group, and in cooperation with the Organisation for Economic Cooperation and Development as well as with interested Parties, to pursue its cooperation with the World Customs Organization concerning the separate identification of certain categories of hazardous wastes in the Harmonized System nomenclature, in particular to cooperate with the World Customs Organization and the Harmonized System Committee in their eventual examination of the classification of the wastes placed on lists A and B prepared by the Technical Working Group in the Harmonized System nomenclature;

III. Organisation for Economic Cooperation and Development (OECD)

1. Takes note of the cooperation between the Secretariat of the Basel Convention and the OECD Environment Directorate on matters pertaining to the implementation of the Basel Convention;

2. Requests the Secretariat further to cooperate with the OECD Environment Directorate on matters concerning the implementation of the Basel Convention and propose, as appropriate, any arrangement best suited to fulfil this task;

3. Further requests the Secretariat, in close consultation with the Chairperson of the Technical Working Group, to work out implications and the modalities required to aim at achieving compatibility among the different systems dealing with the control of transboundary movements of wastes and hazardous wastes;

4. Also requests its Technical Working Group to ensure close liaison with the OECD Waste Management Policy Group on the matter of harmonization of the OECD and the Basel Convention systems concerning the control of transboundary movements of hazardous wastes, and report on progress to the fifth meeting of the Conference of the Parties.

IV/17. Cooperation between the Basel Convention and the activities undertaken at the global level leading to the development of the legally binding instruments for the application of the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade and on persistent organic pollutants

The Conference

1. Takes note of the activities of the Technical Working Group regarding efforts to ensure that the international legally binding instruments being prepared concerning the implementation of the prior informed consent procedure and on persistent organic pollutants do not overlap with the Basel Convention;

2. Emphasizes that the sets of technical guidelines on wastes comprising or containing PCBs, PCTs, and PBBs and on hazardous waste from the production and use of organic solvents prepared by the Technical Working Group and adopted by the second meeting of the Conference of the Parties are of relevance to the issue of a number of persistent organic pollutants;

3. Requests the Secretariat of the Basel Convention, under the guidance of the Technical Working Group, to continue its cooperation with the United Nations Environment Programme and other relevant intergovernmental organizations, in particular with the Food and Agriculture Organization of the United Nations, the International Maritime Organization, the United Nations Economic Commission for Europe and the World Health Organization, on matters pertaining to coordination among these bodies, with a view to developing legally binding instruments which would not overlap with the Basel Convention;

4. Invites Parties to initiate, as appropriate and if not yet done, consultations with their respective national authorities responsible for chemical management to ensure consistency in regard to the scope of the Basel Convention and the newly developed legally binding instruments on hazardous chemicals;

5. Requests the Technical Working Group to consider the further elaboration of technical guidelines for the environmentally sound management of persistent organic pollutants;

6. Further invites Parties, as appropriate, to consider the particular difficulties posed by persistent organic pollutant wastes when providing technical assistance.

Annex

TABLE OF PROPOSED ACTIVITIES OF THE TECHNICAL WORKING GROUP FOR 1998, 1999 AND 2000

TASKS	ACTIVITIES	YEAR (tentative)
I. **Hazard characterization and classification of wastes**	1. Carry forward responsibility for assessing wastes placed on list C, and for taking charge of review or adjustment procedure for lists of wastes (A and B), including initiation of work on waste about which particular concerns were expressed 1/	1998-2000
	2. Prepare a work programme for advancing with work on hazard characteristics, in particular concerning the hazard classes H6.2, H10, H11, H12 and H13	1998
	3. Implement work programme on hazard characteristics, including work on dioxins and dibenzofurans	1998-2000
	4. Elaborate guidance materials or technical guidelines to assist Parties and other States regarding the conclusion of bilateral, multilateral or regional agreements or arrangements	1998
	5. Consider the classification of waste pesticides destined for reformulation together with details of recovery operations of concern	1999
II. **Technical Guidelines**	1. Agree on final text for the technical guidelines on physico-chemical treatment (D9) and biological treatment (D8)	1998
	2. Prepare technical guidelines on: • clinical waste (Y1) • disposal of waste tyres • waste batteries	1998
	3. Prepare technical guidelines on: • recycling/reclamation of metals and metal compounds (R4) • wastes resulting from surface treatment of metals and plastics (Y17)	1999-2000

1. These wastes include wastes that are not easily identifiable in Annex I to the Basel Convention although the Technical Working Group expressed concerns as possibly presenting important hazard characteristics.

TASKS	ACTIVITIES	YEAR (tentative)
III. **Recovery, hazardous waste minimization and cleaner production**	1. Continue with the work of selecting hazardous wastes susceptible to cleaner production approaches within the framework of the Basel Convention	
	2. Further initiate new case studies on recovery of hazardous wastes and assessment of recovery facilities	
IV. **Regional centres**	1. Provide technical input or guidance to assist in the establishment and operation of regional centres for training and technology transfer regarding the management of hazardous wastes and the minimization of their generation	1998-2000
V. **Harmonized Commodity Description and Coding System (HS)**	1. Together with the World Customs Organization (WCO) and its Harmonize System Committee review the relationship between the lists of wastes (A and B) prepared by the Technical Working Group and the HS codes	1998
	2. Provide guidance to the Secretariat of the Basel Convention on eventuality of making new proposals to WCO after December 1997	1998
	3. Elaborate a work plan concerning cooperation with WCO, in particular in (i) providing technical guidance to WCO on hazardous wastes; (ii) recommending ways for Parties to use HS codes for wastes before formal entry into force of the amended HS; and (iii) any other matter of importance	1998
VI. **Application of prior informed consent (PIC) for hazardous chemicals and persistent organic chemicals (POPs)**	1. Provide technical guidance to the Secretariat of the Basel Convention on matters pertaining to coordination among inter-governmental bodies responsible or involved in developing legally binding instruments for hazardous chemicals to ensure there is no overlap with or gaps between these instruments and the Basel Convention	1998-2000
	2. Issue guidance notes or materials as necessary to the organizations involved in PIC and POPs on the classification and hazard characterization of wastes within the framework of the Basel Convention	

TASKS	ACTIVITIES	YEAR (tentative)
VII. **Harmonization of lists of wastes and related procedures concerning their transboundary movements at the world level**	1. Provide guidance to the Secretariat of the Basel Convention on the technical implications and modalities required to aim at achieving compatibility among the different international/ regional systems dealing with the control of transboundary movements of wastes and hazardous wastes 2. Cooperate with OECD Pollution and Prevention Control Group and its Waste Management Policy Group on the matter of harmonization of the OECD and the Basel Convention control systems for wastes	1998-2000
VIII. **Annex II of the Basel Convention**	1. Initiate work on the scope of Annex II (re: to facilitate classification of post-consumer materials such as plastics and other similar wastes)	1998-1999
IX. **Other**		

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MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Chapter 3.4 (Limited quantities)

Transmitted by the International Association of the Soap, Detergent and Maintenance Products Industry (AISE)

Introduction

A number of attempts have been made to revise and rationalise Limited Quantities provisions but a complete review has not yet been achieved.

There is a general move towards harmonisation linked to reformatting in international modal regulations and an growth in the developments of national regulations based on the UN Model Regulations. However, international and national regulations contain variations which are considered appropriate to them but which create problems for shippers who need to move and distribute goods under these different regulations.

The reason for this is partly due to the fact that UN Chapter 3.4 does not take account of the problems which arise in different circumstances and AISE offers this paper in an attempt to highlight these problems and seek solutions which may be universally acceptable.

AISE offers this paper partly as a proposal for certain changes and partly as a discussion document for development.

GE.98-20957

Proposal 1

Reintroduce the table from Chapter 3 of the ninth edition which provides a matrix for the allocation of inner receptacle sizes into Column 7 of the Dangerous Goods List.

Justification

Over the course of time figures in Column 7 may be the subject of proposals for change and if no matrix is clearly provided in the Model Regulations control of the basic matrix will be lost.

Proposal 2

The inner receptacle sizes for Classes 3, 6.1. and 8 to be revised to be:

Liquid	PG II	3 litres
	PG III	5 litres
Solid	PG II	3 kilos
	PG III	5 kilos

Justification

The ratio between PG II and PG III in each class varies and the justification is difficult to understand.

		UN	RID/ADR
Class 3		1:5	3:5
Class 6.1	Liquid	1:10	1:6
	Solid	1:6	1:6
Class 8`	Liquid	1:2	1:3
	Solid	1:2	1:2

Rationalisation in these three classes at the suggested levels would have two benefits:

a) it would produce a more rational approach for the three most common classes where the ratio of risk between PG II and PG III is probably the same;

b) it would help industry to achieve some rationalisation of packaging as the packagings used are often the same specification for each of these three classes and for Class 9 where the PG III limit is 5 litres/5 kgs.

Proposal 3

3.4.8 should be replaced by a general small quantity exemption from labelling and documentation for, at least, Classes 3, 6.1, 8 and 9:

PG II	liquids	300mls
	solids	300 g.
PG III	liquids	500 mls
	solids	500 g.

Justification

The current 3.4.8 allows for an exemption based upon a marketing condition. Goods which are for personal care or household use are no less hazardous than the same product which is intended for industrial use. Furthermore, there is no definition of "personal care" and "household use" which leaves this provision open to interpretation.

Exemptions are already contained in Special Provision (e.g. SP 190 referring to UN1950 Aerosols).

An alternative might be to permit exemptions such as that for Aerosols via SPs which would allow the exemption to be entry linked rather than hazard linked but this might lead to a proliferation of SPs. A further alternative might be to provide an additional column in the Dangerous Goods List.

The quantities suggested are calculated as 5 % of the figures in Proposal 2.

Proposal 4

Para. 3.4.6 Revise to read:
Packages should be marked with the UN Number(s) and Proper Shipping Name(s) of the contents but need not display hazards warning labels.

Packages containing more than one named substance may be marked [UN 9999 followed by the Class Numbers and Divisions]. (e.g. UN 9999/6.1/3)

Justification

The IMDG Code permits the use of "Dangerous Goods in Limited Quantities" followed by the Class reference but this presents language problems for international transport.

RID and ADR have adopted the use of the UN Numbers or "LQ" set in a diamond outline to overcome the difficulty of language but this may present problems when a separately printed display is attached to the package. Also "LQ" may have other meanings in some parts of the world and a diamond outline may be similar to a trade logo.

The proposed method is more readily linked to the existing UN system.

Proposal 5

Add the following to the text in para. 3.4.7:

"For mixed packaging the description should accord with the package marking."

Justification

Unless the package markings are used in documents there is no means of identifying the relevant packages

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EXPLOSIVES (CLASS 1)

Additional Test for 1.4 and 1.4 S Classification
Evalutation of properties in the definition not currently tested

Transmitted by the Expert from Canada

INTRODUCTION

1. At present the classification of articles and substances into 1.4 Compatibility Group S relies solely on the results of the 6(c) Test. However, the definition for 1.4 and 1.4 S includes requirements which are not determined by the 6(c) Test.

2. The definitions for 1.4 and 1.4 S classifications are as follows:

Paragraph 2.1.1.4 (d) of Recommendations on the Transport of Dangerous Goods Model Regulations", tenth revised edition, page 42:

"Division 1.4 *Substances and articles which present no significant hazard*

"This division comprises substances and articles which present only a small hazard in the event of ignition or initiation during transport. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire shall not cause virtually instantaneous explosion of almost the entire contents of the package.

"Note: Substances and articles of this division are in Compatibility Group S if they are so packaged or designed that any hazardous effects arising from accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast and projection effects are limited to the extent that they do not significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity of the package."

3. The Manual of Tests and Criteria provides various regimes for testing products as candidates for Class 1: Series 1 to 4 define acceptability into Class 1. Series 5 defines acceptability into 1.1 or 1.5. Series 6 defines acceptability into 1.1, 1.2, 1.3, 1.4 or 1.4 S.

4. The 6(a) and 6(b) tests look into the possibility of mass explosion, communication leading to mass explosion and thus classification into 1.1.

5. The 6(c) test classifies into 1.1, 1.2, 1.3, 1.4, and 1.4 S. However it does so by virtue of behavior in a fire. That is, the test looks at behavior of the substance or articles after its package has been degraded by fire.

6. The part of the definition for 1.4 S, "any hazardous effects arising from accidental functioning are confined within the package", this not addressed. The substance or articles are not initiated or ignited in a manner that could determine effects outside the package if the substance or article functioned as intended. There is a possibility that products classified as 1.4 S based on behaviour in a fire may produce a hazardous effect when functioned. Examples are small amounts of detonating explosive which will burn in a fire but would detonate if initiated and would possibly produce hazardous effects outside the package.

7. Initiation or ignition as a result of fire, after the package is degraded, may produce different results from functioning with the intended means of ignition or initiation. Knowledge of the behaviour of the article or substance in both cases is needed to allow proper classification.

8. The definition of 1.4 criteria stipulates that "in the event of ignition or initiation during transport. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected". The 6(c) Test tests for accidental ignition by fire. No test is used to determine how well the effects are confined to the packaged or largely confined to the package when ignited or initiated.

PROPOSAL

8. Canada proposes that a new test, the 6(d) be added to determine those requirements for which there is no current test. The 6 (a) test can serve as a basis for this test to determine effects outside the package in the case of ignition during transport. The 6(a) test would be repeated but without any confinement. After completing the test series 6(a), 6(b) and 6(c), 6(d) would be conducted.

10. The product in question would be initiated in the same manner as prescribed in Test Series 6(a). Items provided with their own means of initiation would use those means unless it is impractical or unsafe to do so. For such a case a remote activating initiation system should be prepared to remove testing personnel from the vicinity of any effect. If the item did not include its own means of initiation, the intended means of initiation should be used.

11. The 1.4 definition calls for "effects largely confined to the package and no projection of appreciable size or range is to be expected". In this case and because the definition uses qualitative terms, Canada proposes to base the criteria on those same criteria either currently accepted for the 6(c) Test or those proposed by the Working Group for the 6(c) Test in Washington.

11.1 For projection criteria 1.4 energy level agreed to during the Working Group in Washington would be used, that is no fragments over 20 J. This is to be measured as in the 6(c) test by no perforation of the aluminum witness screens placed at 4 m from the package.

11.2 The fragment distribution as currently set out in the Manual of Tests and Criteria would be retained: not more than 10 metallic projection, each with a mass exceeding 25 g are thrown more than 50 m from the package; no metallic projection with a mass exceeding 150 g is thrown more than 15 m from the package.

11.3. For the other requirements the criteria which were agreed to during the Working Group in Washington are proposed:

- no fireball or jet of flame beyond 4 m;
- no fiery projection thrown further than 15 m
- a burning time of less than 33 s[illegible]d for 100 kg net explosives weight with the appropriate scaling and measurement factors.

12 Such criteria would be in line with current 1.4 other than Compatibility Group S classifications.

13. The definition of a 1.4 S article or substance requires that any hazardous effects be *confined to inside* the package: the package cannot be perforated (projections are confined); the package must not allow flames to come through (thermal effects are confined to inside the package) and the package must remain intact (blast effects are confined to within the package). This can be evaluated visually after the event and with videos for the flames. The setting of these criteria is based on the definitions: the effects must be confined.

EFFECT

14. The criteria selected for the 1.4, other than compatibility group S, are consistent with current numbers and should have little impact on classification.

15. The proposed criteria for a 1.4 S, specifically that hazardous effects be confined to the package, may have some effect on classification because this requirement was never tested. However, we would like to point out that this proposal does not suggest that hazardous effects are to be eliminated but only that they be confined to the package. If articles or substances already classified fail to meet this proposed test, they also fail to meet the definitions for 1.4 S and are not properly classified. *The solution is not to change criteria to allow these substances or articles into this classification but to change the packaging so that they do meet the intentions of the definition.*

16. It must be pointed out that though such a test was never a requirement, Competent Authorities did have the option of using such a test in support of their decisions. The inclusion of such a est in the prescribed test regime will allow for more consistent uniformity in classification.

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EXPLOSIVES (CLASS 1)

Proposed testing regime and criteria for the exclusion of devices from Class 1

Transmitted by the experts from Canada and the Netherlands

INTRODUCTION

1. At the July 1997 Geneva meeting Canada submitted UN/SCETDG/13/INF.10 on possible tests and criteria for the exclusion of devices from Class 1. The paper was not reviewed in July 1997 but was discussed briefly at the informal Working Group on the 6(c) Test held in Washington in February. It was suggested that a formal paper be presented for discussion by the Sub-Committee in July. Canada and the Netherlands put forward this paper.

2. When an article has been demonstrated to behave as a Class 1.4, compatibility group S, it is possible to exclude the article from Class 1, (Box 36 of Table 10.3 in the Manual of Tests and Criteria) provided it meets the definition in Chapter 2.1, paragraph 2.1.1.1 (b) of the Recommendations on the Transport of Dangerous Goods Model Regulations", tenth revised edition, page 41. This paragraph reads as follows:

> "devices containing explosives substances in such quantity or of such a character that their inadvertent or accidental ignition or initiation during transport shall not cause any effect external to the device by projection, fire, smoke, heat or loud noise;"

3. A variation (unpackaged and unconfined) of the 6(a) test is suggested in a note to paragraph 16.6.1.4.7 (a) of the Manual of Tests and Criteria but measurable criteria are not given.

REVIEW and DISCUSSION of DEFINITIONS

4. The definition for excluding an article from Class 1 under this scheme applies to a device, not a substance and only if the article was manufactured with a view to producing a practical explosive or pyrotechnic effect. (Box 35 of Table 10.3 in the Manual of Tests and Criteria).

5. The definition includes "shall not cause any effect" this, in essence, is no effect outside the device. No effect may be interpreted as not detectable by the human senses or by measurement. This would be a very strict interpretation and could possibly prevent the exclusion of any device from Class 1 since sensitive instrumentation is available that could detect minute effects, for example, the smallest heat rise. In the paragraphs below, Canada and the Netherlands propose criteria which could be interpreted as not causing discomfort or possible injury.

6. "their inadvertent or accidental ignition or initiation". The decision is how to set off devices that do not carry their own means of ignition. Canada and the Netherlands propose that the intended means of ignition be used. The prescription for the 6(a) and 6(b) Tests where articles without their own means of ignition are nevertheless functioned also points in this direction (Paragraphs 16.4.1.3.3 (b) and 16.5.1.5 (b) of the Manual of Tests and Criteria).

7. If there is no projection, fire, smoke, heat or loud noise a device may be removed from Class 1. However, if there *is* any projection, fire, smoke, heat or loud noise, then for the device to be removed from Class 1 the possibility of it functioning must be proven to be small. The note for Paragraph 2.1.3.3.1 of the Recommendations reads:

> "Theoretical analyses, test, data or other evidence of safety should be provided to establish that such an event is very unlikely. .....Vibration related to the proposed modes of transport, static electricity, electromagnetic radiation at all relevant frequencies, (maximum intensity 100 $W.m^{-2}$), adverse climatic conditions and compatibility of explosives substances with glues, paints and packaging materials.

8. This paper proposes characteristics that would indicate no effects outside the device. However, if such effects were present but the Competent Authority was convinced that the event was unlikely, the Competent Authority could decide to exclude the device from Class 1. Such exclusion must present supporting evidence, including the testing given in above quote from the Recommendations, "Theoretical analyses.....".

9. "effect external to the device"

> Since the concern is one of safety the inherent properties of the device are to be assessed and not how well these properties may be camouflaged by packaging. The test must be conducted on the article outside the packaging. This is clarified in paragraph 16.6.1.4.7 (a)of the Manual of Tests and Criteria.

10. There are a number of devices which use explosives or pyrotechnics to initiate other effects which are not normally considered as belonging to Class 1. For example, a very small squib could initiate a flammable gas mixture. This paper is concerned with the exclusion from Class 1 and not whether the device should be put into another hazardous classification. Therefore the test should determine if the device and effect *caused by the explosives or pyrotechnic itself* and not whether another effect caused by other materials may be present.

11. In the example just cited the evaluation should be done on the squib without any flammable gas. If the device then meets the criteria proposed below it could be considered for exclusion from Class 1. If it meets the criteria for flammable gas it may then be placed into Class 2.1. Another device may, as a result of testing, be completely removed from the provision of the transport of dangerous goods.

PROPOSAL

12. The 6(c) Test is carried out and the article is demonstrated to the meet 1.4 S criteria.

13. A single article, outside its shipping container is tested. When required, it will be initiated with its intended means of ignition.

14. Whether external effects are present is measured in the following manner:

    14.1 Attach a thermocouple to the outer surface of the device to measure heat as a temperature.

    14.2 Place a noise level metre, 45 cm from the device to detect noise. This is approximately arm's length.

    14.3 Wrap the device in 2 wraps of tissue paper to detect any fire.

    14.4 Place the device in a paper box whose frame is a thin metal such as wire. The frame is covered with 1 layer of newsprint. A standard newsprint should be used, for example one meeting the requirements of British Standard 7114 for Fireworks. No plane side, i.e. newsprint, should be further than 30 cm from the device. This is to witness any projection.

    14.5 Place the device, with thermocouple and tissue paper, in the newsprint box. If the device has a preferential mode or direction discharge, this cannot be placed downward.

    14.6 Fire the device as it was intended. A qualifying note: the assessment must be based on the functioning of the article and not on that of the ignition system.

15. Some devices may be large and difficult to subject to the above. It should be left to the Competent Authority to decide whether testing only the part of the device containing the explosive would be appropriate. Many of these devices however, are small and can easily be subjected to the testing regime being proposed.

CRITERIA

16. Canada and the Netherlands reiterate the description in the definition: "not cause any effect external to the device by projection, fire, smoke, heat or loud noise" and proposes criteria which, though they could be considered as producing an external effect, are small enough to disregard the explosive or pyrotechnic nature of the device.

16.1 The heat criterion is redefined as a temperature. No heat would imply no increase in heat because all articles have some inherent heat. Hence any measured increase in temperature would result from heat being produced. Another approach is to set an upper limit on an acceptable temperature. This is what is proposed.

The maximum temperature is 45°C; this is close to the maximum tolerated temperature to the hand for a short period of time. According to Stoll and Chianta, "Heat Transfer through fabric as related to thermal injuries", Transactions New York Academy of Science" 1970, page 649, 44°C represents the lower limits of injurious temperature. The 45°C maximum represents the no heat effect criterion.

It is important to comment on the choice of this temperature. If we look at the example of oxygen generators where a maximum 100°C for the outside of the package is allowed, the 45°C may appear conservative. However, the 100°C is a maximum allowed for the generators *to be allowed for transport as dangerous* goods. The 45°C is the maximum *allowed for exclusion* from Class 1 and can imply *exclusion from control as a dangerous good.*

16.2 The maximum noise level is suggested to be 120 dB(A). This represents the no loud noise criterion.

The definition uses the terms "no loud noise". Setting a measurable is based on perceptions of what is a loud noise. Pain threshold is about 140 dB(A) . A recognized standard for continuous exposure is 90 dB(A), lower in some jurisdictions. The proposal sets the level between these extremes, recognizing that the scale is logarithmical.

16.3 The tissue paper must not catch fire; this is evidence of no fire. Scorching and similar effects are evidence of heating and are captured by the 100°C maximum temperature.

16.4 The newsprint must not be perforated; this is evidence of no projection.

17. Under these criteria it is reasonable to consider that the device meets the criteria given in paragraph 2.1.1.1 (b) of the Recommendations

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LIST OF GROUP IB SUBSTANCES							
UN NO.	*SUBSTANCE*	*LC50 (ppm)*	*LCLo (ppm)*	*NOTE*	*V (20°C) (ppm)*	*NOTE*	*RTECS***
UN 1580	Chloropicrin	–	50	R*h	26100		PB6300
UN 3023	tert-Octyl mercaptan	102	–	R*	5000		MJ1500
UN 2232	2-Chloroethanal (Chloroacetaldehyde)	160	–	A	24300		AB2450
UN 1752	Chloroacetyl chloride	660	–	C	24600		AO6475
UN 2668	Chloroacetonitrile	–	500	R*	13200		AL8225
UN 1182	Ethyl chloroformate	145	–	R	55300		LQ6125
UN 1670	Perchloromethyl mercaptan	–	69	R*	32900		PB0370
UN 1672	Phenylcarbylamine chloride	–	1	20000		e	NJ6700
UN 2487	Phenyl isocyanate	16	–	A	2470		DA3675
UN 2337	Phenyl mercaptan	66	–	R*	1450		DC0525
UN 1810	Phosphorus oxychloride	96	–	R*	35500		TH4897
UN 1809	Phosphorus trichloride	208	–	R*	125000		TH3675
UN 1695	Chloroacetone, stabilized	262	–	R	41900		UC0700
UN 2485	n-Butyl isocyanate	105	–	C	13900		NQ8250
UN 2743	n-Butyl chloroformate	–	–	1	9870		LQ5890
UN 1569	Bromoacetone	–	95	R*h	11900		UC0525
UN 1746	Bromine trifluoride	50	–	eS	9200		EF9360
UN 2740	n-Propyl chloroformate	319	–	Rm	25500		LQ6830
UN 1595	Dimethyl sulfate	17	–	R*	1000		WS8225

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EXPLOSIVES (CLASS 1)

Proposal for a new entry for hydrazinium nitroformate in Class 1 (1.1D)

Transmitted by the Expert from the Netherlands

Introduction

1. The research on the field of propellants for space applications concentrates on increasing the performance. This is very attractive for either reducing the volume of the propellant or for increasing the pay load of a rocket system. One way of obtaining this increased performance is to apply new energetic materials in the propellant formulation.

2. One very promising candidate is Hydrazinium nitroformate (HNF). The main advantages are the high energy content (ΔH_c = - 5820 kJ/kg) and the small molecules in the decomposition products, which gives a high gas yield. The international interest in this substance is rapidly increasing, so it is expected that this substance will be transported globally in increasing amounts. At the moment the substance is produced in the Netherlands.

Properties of HNF

3. The data sheet for new classification of substances, according to Figure 1 of the Model Regulations is included in Annex. It should be stated that most of the data is for the pure substance. This chapter will give a summary of the most characteristic results.
Hydrazinium nitroformate ($N_2H_5C(NO_2)_3$) is a bright yellow crystalline salt of trinitromethane and hydrazine, with a molecular weight of about 183 kg/kmol. Its oxygen balance is +13% and the enthalpy of formation = -72 kJ/mol.
The substance is capable of detonation with a velocity of 8.4 km/s. The threshold with regards to sensitiveness to shock is comparable to that of pressed Composition B (about 3 GPa with a PPMA gap test).
The impact sensitiveness is 2 - 3 J, (determined with Test 3 (a) (ii), the BAM Fallhammer) and the friction sensitiveness is 16 - 36 N (determined with Test 3 (b) (i), the BAM friction apparatus) depending on the purity of the HNF. The thermal stability (Test 3(c)) is satisfactory, during 168 hours of testing at 75° C no temperature difference between the sample and reference material is measured. The small scale burning test (Test 3 (d)) is negative. The general conclusion is that the substance fails the friction test but passes the three other tests.
The twelve meter drop test for packaged substances (Test 4 (b) (ii)) was performed with the substance packaged in a fibre board box with good result (no fire or explosion occurred).

Phlegmatization of HNF

4. In analogy to for instance PENT, RDX and HMX (which may only be transported when phlegmatized) attempts were made to phlegmatize HNF. Addition of water, alcohol or wax did not have the desired result. Therefore, more sophisticated phlegmatizing agents need to be applied.
The phlegmatization is based on the idea of using a (semi-) liquid medium in which the HNF crystals can float and thus have the full freedom to move with the rapid movement of a shear force. This can be obtained by a non-solvent liquid with 5 - 6 % gelling agent. For further improvement a wetting agent can be used. At the moment it is not possible to process the gels with more than 40% (by weight) of HNF because of the high viscosity of such mixtures, but further research is being performed.
The results of impact and friction sensitiveness measurements with samples containing 40% HNF are 30 J and 240 N respectively. Extrapolation of the results at various loads of HNF indicates that mixtures with 60% HNF would have a friction sensitiveness of about 100 N, but this is not demonstrated by experiments yet. If the additional results are satisfactory and available in time for the Fifteenth Session, an INF.paper will be submitted presenting the results and proposing a lower phlegmatizer percentage.

5. Since the non-solvent liquid can be volatile a provision similar to Special Provision 28 of Chapter 3.3 is necessary to prevent that the concentration of phlegmatizer falls below the minimum concentration.

Proposals

6. It is proposed to include an entry in the dangerous goods list of Chapter 3.2 of the Model Regulations according to the following proposal.

UN No.	Name and Description	Class or division	Subsidiary Risks	UN packing group	Special provisions	Limited quantities	Packagings and IBCs		Portable tanks	
							Packing instruction	Special provisions	Portable tank instruction	Portable tank special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
XXXX	HYDRAZINIUM NITROFORMATE (HNF), DESENSITIZED, with not less than 60% phlegmatizer of the gel type	1.1D			266, YYY		112			

7. Insert a new special provision in Chapter 3.3 of the Model Regulations reading:

YYY The substance shall be packed so that the percentage of phlegmatizer will not fall below that stated, at any time during transport.

Alternatively, instead of inserting a new Special Provision, Special Provision 28 may be changed accordingly.

* * * * *

DATA SHEET TO BE SUBMITTED TO THE UNITED NATIONS FOR NEW OR AMENDED CLASSIFICATION OF SUBSTANCES

Submitted by: **the expert from the Netherlands** Date: **April 1998** .....

Supply all relevant information including sources of basic classification data. Data should relate to the product in the form to be transported. State test methods. Answer all questions - if necessary state "not known" or "not applicable" - If data is not available in the form requested, provide what is available with details. Delete inappropriate words.

Section 1. SUBSTANCE IDENTITY

1.1 Chemical name: **Hydrazinium nitroformate** .....

1.2 Chemical formula: $N_2H_5C(NO_2)_3$ .....

1.3 Other names/synonyms: **HNF** .....

1.4.1 UN number ..... 1.4.2 CAS number .....

1.5 Proposed classification for the Recommendations

1.5.1 proper shipping name (3.1.2 */): **Hydrazinium nitroformate (HNF), Desensitized, with not less than 60% phlegmatizer of the gel type**

1.5.2 class/division: **1.1D** ..... subsidiary risk(s)

packing group: not applicable .

1.5.3 proposed special provisions: **YYY (or modified 28), 266**

1.5.4 proposed packing method: **Packing Instruction 112**

Section 2.PHYSICAL PROPERTIES

2.1 Melting point or range: **122 - 124** .... °C

2.2 Boiling point or range: **not applicable (decomposes at melting point)**

2.3 Relative density at:

2.3.1 15 °C .....

2.3.2 20 °C **1.8** .....

2.3.3 50 °C .....

2.4 Vapour pressure at:

2.4.1 50 °C ..... kPa

2.4.2 65 °C ..... kPa

2.5 Viscosity at 20 °C**/ ..... m^2/s

2.6 Solubility in water at 20 °C ~ **100** .. g/100 ml

2.7 Physical state at 20 °C (2.2.1.1*/) **solid/~~liquid/gas~~****/

2.8 Appearance at normal carriage temperatures, including colour and odour: **bright, yellow crystalline powder** .....

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*/ *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

**/ *See definition of "liquid" in 1.2.1 of the Model Regulations on the Transport of Dangerous Goods.*

2.9 Other relevant physical properties .....
.....

Section 3. FLAMMABILITY

3.1 Flammable vapour

3.1.1 Flash point (2.3.3 ***/) ..... °C oc/cc

3.1.2 Is combustion sustained? (2.3.1.2*/) yes/no

3.2 Autoignition temperature ..... °C

3.3 Flammability range (LEL/UEL) ..... %

3.4 Is the substance a flammable solid? (2.4.2 */) NO

3.4.1 If yes, give details .....
.....
.....

Section 4. CHEMICAL PROPERTIES

4.1 Does the substance require inhibition/stabilization or other treatment such as nitrogen blanket to prevent hazardous reactivity ? yes/no

If yes, state

4.1.1 Inhibitor/stabilizer used .....

4.1.2 Alternative method .....

4.1.3 Time effective at 55 °C .....

4.1.4 Conditions rendering in ineffective .....

4.2 Is the substance an explosive according to paragraph 2.1.1.1? (2.1*/) yes/no

4.2.1 If yes, give details: **is manufactured to produce a practical, explosive effect, can detonate with a velocity of 8.4 km/s, the shock initiation threshold is comparable to presse Composition B, the pure substance is thermally stable, the pure substance is too sensitive to friction, the phlegmatized substance meets the requirements of Test Series 3** .....

4.3 Is the substance a desensitized explosive? (2.4.2.4*/) yes/no

4.3.1 If yes, give details .....
.....
.....

4.4 Is the substance a self-reactive substance? (2.4.1 */) yes/no

If yes, state

4.4.1 exit box of flow chart .....

What is the self accelerating decomposition temperature (SADT) for a 50 kg package? .... °C

Is the temperature control required? (2.4.2.3.4*/) yes/no

4.4.2 proposed control temperature for a 50 kg package ..... °C

4.4.3 proposed emergency temperature for a 50 kg package ..... °C

***/ *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

4.5 Is the substance pyrophoric? (2.4.3 */) **yes/no**

4.5.1 If yes, give details .....

4.6 Is the substance liable to self-heating? (2.4.3 */) **yes/no**

4.6.1 If yes, give details .....

4.7 Is the substance an organic peroxide (2.5.1 */) **yes/no**

If yes state

4.7.1 exit box of flow chart .....

What is the self accelerating decomposition temperature (SADT) for a 50 kg package? °C

Is the temperature control required? (2.5.3.4.1 */) yes/no

4.7.2 proposed control temperature for a 50 kg package ..... °C

4.7.3 proposed emergency temperature for a 50 kg package ..... °C

4.8 Does the substance in contact with water emit flammable gases? (2.4.4 */) **yes/no**

4.8.1 If yes give details .....

4.9 Does the substance have oxidizing properties (2.5.1 */) **yes/no**

4.9.1 If yes, give details .....

4.10 Corrosivity (2.8 */) to:

4.10.1 mild steel ..... mm/year at ..... °C

4.10.2 aluminium ..... mm/year at ..... °C

4.10.3 other packaging materials

(specify) .... mm/year at .....

.... mm/year at .....

4.11 Other relevant chemical properties .....

Section 5, HARMFUL BIOLOGICAL EFFECTS

5.1 LD 50, oral (2.6.2.1.1 */) **128** ..... mg/kg Animal species: **rats** .....

5.2 LD 50, dermal (2.6.2.1.2 */): **not toxic** .. mg/kg Animal species: **rats** .....

5.3 LC 50, inhalation (2.6.2.1.3 */) ..... mg/litre Exposure time ..... hours
or ml/m³ ..... Animal species .....

5.4 Saturated vapour concentration at 20 °C (2.6.2.2.4.3 */) ml/m3

5.5 Skin exposure (2.8 */) results: **none irritative, non corrosive** Exposure time **4** ..... hours
Animal species: **albino rabbits**

5.6 Other data: **possibly mutagenic, based on Ames test with Salmonella typhemurium** .....

*/ *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

5.7 Human experience .....
.....

Section 6. SUPPLEMENTARY INFORMATION

6.1 Recommended emergency action

6.1.1 Fire (include suitable and unsuitable extinguishing agents)
water, dry chemicals, CO_2 .....

6.1.2 Spillage **brush off and rinse with water** .....

6.2 Is it proposed to transport the substance in:

6.2.1 Intermediate Bulk Containers (6.5 */) ? **yes/no**

6.2.2 Portable tanks (6.6 */) ? **yes/no**

If yes, give details in Sections 7 and/or 8.

Section 7. INTERMEDIATE BULK CONTAINERS (IBCs) (only complete if yes in 6.2.1)

7.1 Proposed type(s) .....

Section 8. MULTIMODAL TANK TRANSPORT (only complete if yes in 6.2.2)

8.1 Description of proposed tank (including IMO tank type if known) .....
.....

8.2 Minimum test pressure .....

8.3 Minimum shell thickness .....

8.4 Details of bottom openings, if any .....

8.5 Pressure relief arrangements .....

8.6 Degree of filling .....

8.7 Unsuitable construction materials

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*/ *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

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EXPLOSIVES (CLASS 1)

Proposal to amend annex I to the report of the Working Group on the 6(c) test

Transmitted by the Expert from the Netherlands

During the meeting of the Working Group on the 6(c) test, text changes were agreed for the Manual of Tests and Criteria, particularly for including all criteria for classification as 1.4S. One unanticipated effect of this decision was that it was not agreed to include the corresponding complementary criteria in the paragraph dealing with 1.4, other than Compatibility Group S, classification. This only appeared at the reading of the report on the last day of the meeting and it was felt not appropriate to change this in such a late stage of the meeting, particularly since it would mean that most of the experts would not have the chance to read the final text.

On the other hand, this situation leads to a non-logical structure of section 16.6.1.4 of the Manual. Furthermore, the current text in the Working Group report may cause confusion because ofthe way it is written: "..... if none of the following..... occurs.....". This is contrary to the wording for the other Divisions: "..... but any one of the following events occurs." The expert of the Netherlands proposes to correct this non-logical structure along the following lines:

Include in paragraph 16.6.1.4.5 the criteria above which classification into Division 1.4, Compatibility Group other than S is necessary, in it will then suffice in paragraph 16.6.1.4.6 to state that if none of the events occur which would require the product to be assigned to Division 1.1, 1.2, 1.3 or 1.4 other than Compatibility Group S, then the product can be assigned to Division 1.4 Compatibility Group S.

Proposal

Change the paragraphs 16.6.1.4.5 and 16.6.1.4.6 of Annex 1 to the report of the Working Group according to the following text. The text of two other Netherlands proposals (ST/SG/AC.10/C.3/1998/70 and -/1998/71) is tentatively included between ***[square brackets in bold, italic font]***. For reasons of simplicity, the strike through part of the report is not included.

16.6.1.4.5 If none of the events occur which would require the product to be assigned to Division 1.1, 1.2 or 1.3, but any one of the following events occur:

a fireball or jet of flame which extends more than 1 m from the flames of the fire,;

fiery projections emanating from the product are thrown more than 5 m from the edge of the packages or unpackaged articles;

indentations in the witness screen of more than [*4* mm];

[more than 10 [metallic] fragments with a kinetic energy exceeding 8 J as assessed by the distance - mass relation given in Figure 16.6.1.1];

a burning time of the product measured to be less than 330 seconds for 100 kg net explosive weight (see 16.6.1.4.8: Notes for scaling time measurements in evaluating thermal flux effects)

then the product is assigned to Division 1.4 and to a compatibility group other than Compatibility Group S.

16.6.1.4.6 If none of the events occur which would require the product to be assigned to Division 1.1, 1.2, 1.3 or 1.4 other than Compatibility Group S, then the product is assigned to Division 1.4 Compatibility Group S.

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EXPLOSIVES (CLASS 1)

Kinetic energy criteria in the 6(c) test as assessed by the distance - Mass relation

Transmitted by the Expert from the Netherlands

1. The UN Working Group tasked with clarifying the 6(c) tests met in February 1998 in Washington and discussed, amongst others, the matter of projection hazard.
On the one hand there was consensus to use 20 J as the border line between 1.2 and 1.4 classification, when assessed with perforation of the witness screens. On the other hand, it was felt that it was not suitable to depend on the witness screens alone for the classification. Both the experts from the USA and the Netherlands presented curves to represent the distance - mass relation for fragments wit 20 J and 8 Joule. When using the same starting points for the calculations the results from both countries were very similar. The curves are given in Figure 1

2. The Working Group discussed the topic of the allowable number of fragments at length, but was not able to reach consensus. It was decided to maintain the current criteria (not more than 10 metallic fragments, each with mass exceeding 25 g, are thrown more than 50 m from the edge of the packaged or unpackaged articles, or: a metallic projection with mass exceeding 150 g thrown more than 15 m from the edge of the packaged or unpackaged articles) for the time being

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Strict application of these criteria can result in the situation that 10 fragments with a mass of 150 g can be thrown at an unlimited distance and thus unlimited kinetic energy. This situation represented by the marked area in Figure 1.
The described situation leads to very strange cases where, when one fragment would "accidentally" hit a witness screen a 1.2 classification would result; while when no screens are hit a 1.4 classification is obtained. It is clear that the latter might represent a much larger hazard than a fragment with, for instance, 25 J kinetic energy.

3. It is recognised that the reluctance to use the energy curves to establish the classification is based on the desire not to change current classification, but it is also recalled that the described ambiguous situation was one of the reasons why the whole process of clarifying the 6(c) test was started.

4. The expert from the Netherlands would like to invite the experts from the various countries to reconsider this issue. There is now the chance to improve the description of the 6(c) test, a need which is felt by many competent authorities and test institutes.

5. It is recalled that the three witness screens are placed at a distance of 4 m from the edge of the packages. The surface of the hemisphere with a radius of 4 m, representing the plane through which projection can travel, is 100 m^2. The total surface of the three witness screens is 12 m^2, in total one eighth of the surface. In practice, the radius is larger than 4 m, leading to a larger total surface, say 120 m^2. Assuming a homogeneous distribution of the fragments, there is a chance on one to ten for the fragments to hit a witness screen. It would therefore be logical to accept up to ten fragments with a kinetic energy up to 20 J when not assessed by perforation of a witness screen.
Given the more incidental nature of an event for a 1.4S classification, the Netherlands expert feels that the number of ten fragments is not valid in this case. We therefore propose to follow the current practice of "any fragment...." and thus to allow none fragments with an energy exceeding 8J.

Proposal

6. It is proposed that paragraph 16.6.1.4.3, item (b) and (c) of the Manual of Tests and Criteria (as also given in Annex 1 to the report of the working group meeting) be replaced by the following text.

(b) more than 10 [metallic] fragments with a kinetic energy exceeding 20 J as assessed by the distance - mass relation given in Figure 16.6.1.1

7. Similarly, the criteria for 1.4 classification given in Annex 1 to the report of the working group on page 14, paragraph 16.6.1.4.5 are proposed to be amended by the following text

(b) no [metallic] fragments with a kinetic energy exceeding 8 J as assessed by the distance - mass relation given in Figure 16.6.1.1

(c) a projection [including those which function more than 5 m from the fire], thermal effect.....

Include Figure 2 and/or Table 1 as Figure 16.6.1.1 in the Manual of Tests and Criteria.

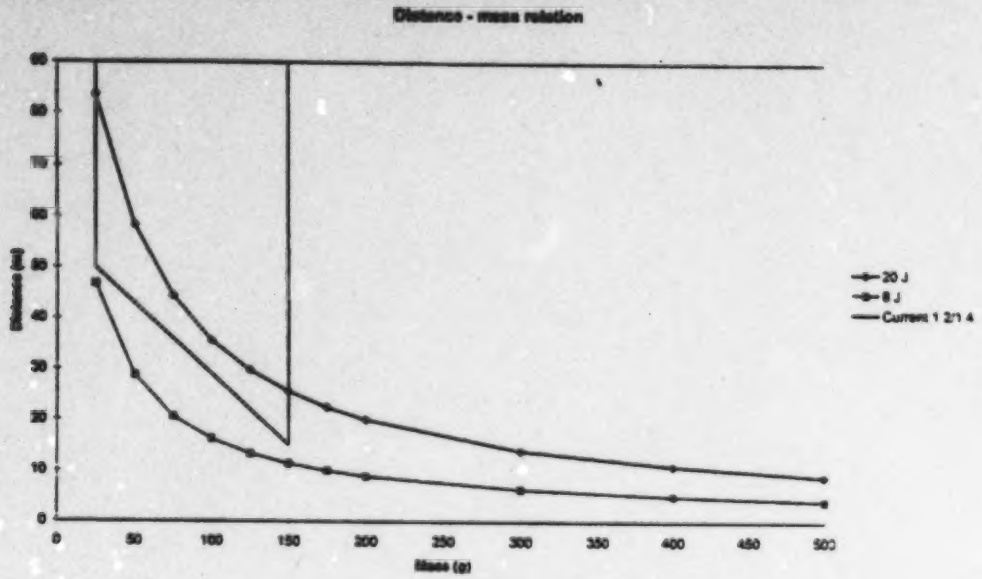

Figure 1 Distance -mass relation for fragments with a kinetic energy of 20 J and 8 J, together with the current criteria for the dividing line between 1.2 and 1.4 classification.

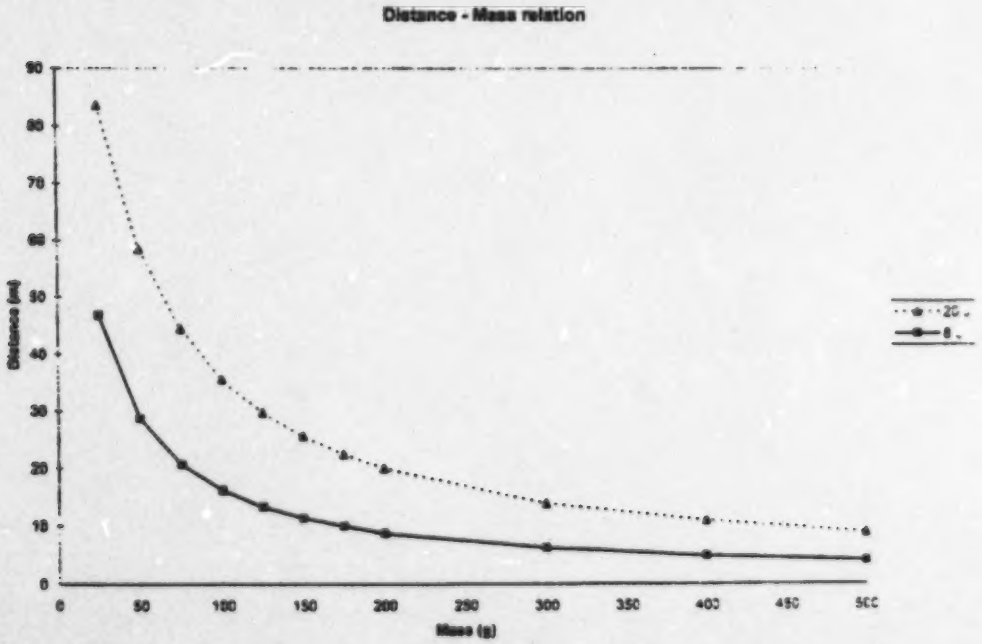

Figure 1 Distance -mass relation for fragments with a kinetic energy of 20 J and 8 J

Table 1 Distance -mass data for fragments with a kinetic energy of 20 J and 8 J

Mass	Projection distance (m)	
(g)	20 J	8 J
25	83.6	46.8
50	58.4	28.7
75	44.4	20.6
100	35.6	16.2
125	29.8	13.3
150	25.6	11.4
175	22.43	10
200	20	8.8
300	13.9	6.3
400	10.9	4.9
500	8.9	4.1

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EXPLOSIVES (CLASS 1)

Indentation criterion for the 1.4/1.4S bordeline in the 6(c) test

Transmitted by the Expert from the Netherlands

1. During the meeting of the UN Working Group tasked with clarifying the 6(c) tests in February 1998 in Washington the issue of using aluminium witness screens for the determination of projection hazard was discussed. The Working Group reached consensus on the type of aluminium to be used (1100-0, Brinell hardness 23, tensile strength 90 MPa). There was also consensus that a kinetic energy of 8 Joule would serve as the breaking point between 1.4 and 1.4S products. No data was available on the indentation depth of the aluminium witness screens when hit by fragments with a kinetic energy of 8 Joule. It was agreed to use a similar procedure and similar fragments as used by Canada for establishing the kinetic energy for penetrating the witness screens. It was also agreed that NIOSH in the USA and TNO in the Netherlands would perform experiments to obtain the missing data. This paper presents the results obtained by the Netherlands.

2. A total of 24 shots has been performed at velocities between 119.2 and 122.7 m/s with the standard NATO fragment of 0.22 calibre and a mass of 1.1 g. This results in kinetic energies between 7.81 and 8.28 J. The average value is 7.98 J with a standard deviation of 0.19 J. The measured average indentation depth is 4.05 mm with a standard deviation of 0.12 mm.

Proposal

It is proposed to accept 4 mm indentation depth as the border line between 1.4 and 1.4S classification.

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MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Listing and Classification

Nitroglycerin mixture, desensitized, liquid, non-flammable, N.O.S. with not more than 30% nitroglycerin, by mass

Transmitted by the Expert from Germany

INTRODUCTION:

At the 12th session of the Sub-Committee of Experts on the Transport of Dangerous Goods the Expert from Germany had proposed amongst others an UN No. for "NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, N.O.S., with not more than 30% nitroglycerin, by mass". After discussion of the German proposal the Expert from Germany announced that, because of the outstanding debate of the Belgian proposal concerning the introduction of UN entries in class 3 for desensitized nitroglycerin mixtures (see doc. ST/SG/AC.10/C.3/1997/47), he would still have to revise his proposal and submit it in due course.

For the time being the following nitroglycerin mixtures are transported in Germany:

1. max. 10 % in bivalent alcohols (e.g. 1,2-Propanediol, flash point: 101°C)

2. max.5% in vegetable oils with flash point >200°C (medium chain Triglycerides of different lengths and viscosity)

3. max. 5,5% in a dispersion of inert, solid, organic and anorganic as well as inert liquid, non flammable substances

4. max. 20% in an aqueous Polymer suspension (Polyacrylat).

In Germany these mixtures are packaged as follows:

Stainless steel or a lined steel drum, non-removable head, 1A1, not exceeding 200 litres in volume. The heads of the drums may contain openings exceeding 7 cm in diameter, if they are closed by a screw-top or a closely fixed lid.

Packages should be provided with a pressure relief device the set pressure of which is 3 bar (overpressure). This device should be activated in the event of fire engulfment at a temperature level of 125°C and should be so contructed in order to clear an opening of not less than 44 mm in diameter.

The above mentioned mixtures are not subject to the flash point- and boiling point- criteria of class 3.

As in Germany the transport of nitroglycerin mixtures, non- flammable, is still of great importance, the Expert from Germany proposes a new UN entry for the above mentioned mixtures in the UN Recommendations. The test data have already been submitted with the German document ST/SG/AC.10/C.3/R. 606.

PROPOSAL:

The Expert from Germany proposes the following new UN entry:

> "UN No. XXXX NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, NON-FLAMMABLE, N.O.S. with not more than 30% nitroglycerin, by mass", class 3, packing group II, special provisions 109 and 274".

The following new special provision:

> "These substances shall not be classified and transported unless authorized by the competent authority on the basis of results from Series 2 tests and a Series 6 (c) test on packages as prepared for transport (see 2.1.3.1) . The competent authority shall assign the package type used for the Series 6(c) test."

should be added to this UN No.

The proposed new UN No., including special provisions, should be included in chapter 3.2 of the UN Recommendations and chapter 3.3 respectively.

In addition the proposed UN entry should be included in the ALPHABETICAL INDEX OF SUBSTANCES AND ARTICLES.

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Sub-Committee of Experts on the Transport of Dangerous Goods
(Fifteenth session,
Geneva, 29 June-10 July 1998,
agenda item 6 (b))

EXPLOSIVES (CLASS 1)

Classification of 1H-Tetrazole under Division 1.1D

Transmitted by the Expert from Germany

Background

The substance 1H-Tetrazole will be placed on the market and its classification had to be decided on. 1H-Tetrazole can already be found in catalogues of commercial fine chemicals.

Properties

The compound was tested at the Federal Institute for Materials Research and Testing (BAM) according to the UN test methods for explosive substances of Class 1. The data obtained are presented on the following pages (Annex 1).

The outcome of the tests is that 1H-Tetrazole is a substance of Class 1.1D. It is not necessary to perform tests of Test Series 6 because the test results of test Series 1 and 2 show the high sensitivity of the substance to shock and the violent effect of heating under confinement. So probably a single package test (test 6(a)) with a standard detonator would lead to a mass explosion. The data sheet (Annex 2) gives further information necessary for classification.

Proposal

Considering the test results obtained (Annex 1), it is proposed to assign the substance 1H-Tetrazole to Division 1.1D.

The Proper shipping name should read: 1H-TETRAZOLE

Class or Division: 1.1D
UN number: xxxx
Concentration: 100 %
Subsidiary Risks: (-)
Special Provisions: (-)
Packing Group: II
Packing Method: Packing instruction 112(c).
Particular packing provisions or exceptions:

5. For UN xxxx packagings of metal shall not be used.

Annex 1

Test Report

1. Name of substance: 1H-Tetrazole

2. General data
2.1 Composition: 1H-Tetrazole, technical pure
2.2 Molecular formula: CH_2N_4
2.3 Physical form: Fine cristalline powder
2.4 Colour: White
2.5 Apparent density: 640 - 700 kg/m^3
2.6 Partical size: not determined

3. Box 2: Is the substance manufactured with the view to producing a practical explosive or pyrotechnic effect ?
3.1 Answer: No
3.2 Exit: Go to Box 3

4. Box 3: Test Series 1
4.1 Propagation of Detonation: UN gap test (test 1(a))
4.2 Sample conditions:
4.3 Observations:
4.4 Result: not performed, but see 6.1
4.5 Effect of heating under confinement: Koenen test (test 1(b))
4.6 Sample conditions: Mass 24,5 g
4.7 Observations: Limiting diameter 3 24 mm
Fragmentation type "G" (time to reaction 20 s,
duration of reaction 0 s)
4.8 Result: "+", shows some explosive effects on heating under confinement
4.9 Effect of ignition under confinement : Time/pressure test (test 1(c)(i)
4.10 Sample conditions:
4.11 Observations:
4.12 Result: not performed (safety reasons)
4.13 Exit: Go to box 4

5. Box 4: Is it an explosive substance ?
5.1 Answer from Test Series 1: Yes
5.2 Exit: go to box 5

6. Box 5: Test Series 2
6.1 Sensitivity to shock: BAM 2" steel tube test, standard detonator 0,6 g PETN
6.2 Sample conditions: Ambient temperature, mass 832 g
6.3 Observations: Fragmentation into > 10 pieces, no substance remains, detonation velocity > 2100 m/s
6.4 Result: "+", sensitive to shock

6.5 Effect of heating under confinement: Koenen test (test 2(b))
6.6 Sample conditions: Mass 24,5 g
6.7 Observations: Limiting diameter 3 24 mm Fragmentation type "G" (time to reaction 20 s, duration of reaction 0 s)
6.8 Result: "+", violent effect on heating under confinement
6.9 Effect of ignition under confinement: Time/pressure test (test 2(c)(i)
6.10 Sample conditions :
6.11 Observations:
6.12 Result: not performed (safety reasons)
6.13 Exit: Go to box 6

7. Box 6: Is the substance too insensitive for acceptance into Class 1 ?
7.1 Answer from Test Series 2: No
7.2 Conclusion: Substance to be considered for Class 1 (box 8)
7.3 Exit: Go to box 9

8. Box 9: Test Series 3
8.1 Thermal stability: 75 0C/48 hour test (test 3(c))
8.2 Sample conditions: 100 g of substance at 75 0C
8.3 Observations: No ignition, explosion, self-heating or visible decomposition
8.4 Result: "-", thermally stable
8.5 Impact sensitivity: BAM fallhammer test (test 3(a)(ii))
8.6 Sample conditions: as received
8.7 Observations: Limiting impact energy 15 J
8.8 Result: "-", not too dangerous to transport in form tested
8.9 Friction sensitivity: BAM friction test (test 3(b)(i))
8.10 Sample conditions: as received
8.11 Observations: Limiting load > 360 N
8.12 Result: "-", not too dangerous to transport in form tested
8.13 Response of a substance to fire: Small scale tests (BAM)
8.14 Sample conditions: Ambient temperature
8.15 Obs ervations: Only partial ignition and decomposition
8.16 Result: "-", not too dangerous to transport in form tested
8.17 Exit: Go to box 10

9. Box 10: Is the substance thermally stable ?
9.1 Answer from test 3(c): Yes
9.2 Exit: Go to box 11

10. Box 11: Is the substance too dangerous for transport in the form in which it was tested ?
10.1 Answer from Test Series 3: No
10.2 Exit: Go to box 18

11. Conclusion: PROVISIONALLY ACCEPT INTO CLASS 1
11.1 Exit: Apply the Class 1 assignment procedure

It should not be necessary to perform tests of Test Series 6 because the test results of Test Series 1 and 2 show the high sensitivity of the substance to shock and the violent effect of heating under confinement. In all probability a single package test (test 6(a)) with a standard detonator leads to a mass explosion. Therefore the substance 1H-Tetrazole should be a candidate of Division 1.1D.

Proposed assignment

Proper shipping name: 1H-TETRAZOLE
UN number: xxxx
Division: 1.1D
Packing group: II
Packing method: Packing instruction 112(c).
Particular packing provisions or exceptions:

5. For UN xxxx packagings of metal shall not be used.

Annex 2

DATA SHEET TO BE SUBMITTED TO THE UNITED NATIONS FOR NEW OR AMENDED CLASSIFICATION OF SUBSTANCES

Submitted by . . . . . Date . . . . . .

Supply all relevant information including sources of basic classification data. Data should relate to the product in the form to be transported. State test methods. Answer all questions - if necessary state "not known" or "not applicable" - If data is not available in the form requested, provide what is available with details. Delete inappropriate words.

Section 1. SUBSTANCE IDENTITY

1.1 Chemical name **1H-TETRAZOLE** . . . . . .

1.2 Chemical formula **CH_2N_4** . . . . . .

1.3 Other names/synonyms . . . . . .

1.4.1 UN number . . . . . 1.4.2 CAS number **288-94-8** . . . . . .

1.5 Proposed classification for the Recommendations

1.5.1 proper shipping name (3.1.2 */) **1H-TETRAZOLE** . . . . . .

1.5.2 class/division **1.1.D** . . . . . subsidiary risk(s) - . . . . . .
packing group **II** . . . . . .

1.5.3 proposed special provisions, if any - . . . . . .

1.5.4 proposed packing method **Packing instruction 113 (c). No packagings of metal shall be permitted.** . . . . . .

Section 2. PHYSICAL PROPERTIES

2.1 Melting point or range **154-158** °C

2.2 Boiling point or range -°C

2.3 Relative density at :

2.3.1 15 °C . . . . . .

2.3.2 20 °C **Apparent density 640-700 kg/m³** . . . . . .

2.3.3 50 °C . . . . . .

2.4 Vapour pressure at :

2.4.1 50 °C **not applicabel (n.a.)** . . . . . kPa

2.4.2 65 °C . . . . . kPa

2.5 Viscosity at 20°C**/ **n.a.** . . . . . m^2/s

2.6 Solubility in water at 20°C . . . . . g/100 ml

no data available (n.d.a.)

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*/ *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

**/ *See definition of "liquid" in 1.2.1 of the Model Regulations on the Transport of Dangerous Goods.*

2.7 Physical state at 20°C (2.2.1.2*/) ~~solid/liquid/gas~~**/

2.8 Appearance at normal carriage temperatures, including colour and odour . . . . . .
Powder, white to off-white; odour : none . . . . . .

2.9 Other relevant physical properties . . . . . .
. . . . . .

Section 3. FLAMMABILITY

3.1 Flammable vapour **n.a.**

3.1.1 Flash point (2.3.3*/) . . . . . °C ~~oc/cc~~

3.1.2 Is combustion sustained? (2.3.1.2*/) **yes/no**

3.2 Autoignition temperature **n.d.a.** . . . . . °C

3.3 Flammability range (LEL/UEL)- . . . . . %

3.4 Is the substance a flammable solid? (2.4.2 */) **no**

3.4.1 If yes, give details . . . . . .
. . . . . .
. . . . . .

Section 4. CHEMICAL PROPERTIES

4.1 Does the substance require inhibition/stabilization or other treatment such as nitrogen blanket to prevent hazardous reactivity ? **yes/no**
If yes, state

4.1.1 Inhibitor/stabilizer used . . . . . .

4.1.2 Alternative method . . . . . .

4.1.3 Time effective at 55°C . . . . . .

4.1.4 Conditions rendering in ineffective . . . . . .

4.2 Is the substance an explosive according to paragraph 2.1.1.1? (2.1 */) **yes/no**

4.2.1 If yes, give details **see test data (Annex 1)** . . . . . .
. . . . . .
. . . . . .

4.3 Is the substance a desensitized explosive? (2.4.2.4 */) **yes/no**

4.3.1 If yes, give details . . . . . .
. . . . . .
. . . . . .

---

*/ *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

**/ *See definition of "liquid" in 1.2.1 of the Model Regulations on the Transport of Dangerous Goods.*

4.4 Is the substance a self-reactive substance? (2.4.1 */) yes/no

If yes, state

4.4.1 exit box of flow chart . . . . . .

What is the self accelerating decomposition temperature (SADT) for a 50 kg package? . . . . . °C

Is the temperature control required? (2.4.2.3.5 */) yes/no

4.4.2 proposed control temperature for a 50 kg package . . . . . °C

4.4.3 proposed emergency temperature for a 50 kg package . . . . . °C

4.5 Is the substance pyrophoric? (2.4.3 */) yes/no

4.5.1 If yes, give details . . . . . .

. . . . . .

. . . . . .

4.6 Is the substance liable to self-heating? (2.4.3 */) yes/no

4.6.1 If yes, give details . . . . . .

. . . . . .

. . . . . .

4.7 Is the substance an organic peroxide (2.5.1 */) yes/no

If yes state

4.7.1 exit box of flow chart . . . . . .

What is the self accelerating decomposition temperature (SADT) for a 50 kg package? . . . . . °C

Is the temperature control required? (2.5.3.5.1 */) yes/no

4.7.2 proposed control temperature for a 50 kg package . . . . . °C

4.7.3 proposed emergency temperature for a 50 kg package . . . . . °C

4.8 Does the substance in contact with water emit flammable gases? (2.4.4 */) yes/no

4.8.1 If yes give details . . . . . .

. . . . . .

. . . . . .

4.9 Does the substance have oxidizing properties (2.5.1 */) yes/no

4.9.1 If yes, give details . . . . . .

. . . . . .

. . . . . .

4.10 Corrosivity (2.8 */) to:

4.10.1 mild steel . . . . . mm/year at . . . . . °C

4.10.2 aluminium . . . . . mm/year at . . . . . °C

4.10.3 other packaging materials

(specify) . . . . mm/year at . . . . .

. . . . mm/year at . . . . .

4.11 Other relevant chemical properties . . . . . .

may explode if heated above melting point; avoid contact with metals and metal salts, may form explosive compounds . . . . . .

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*/ *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

Section 5. HARMFUL BIOLOGICAL EFFECTS

5.1 LD 50, oral (2.6.2.1.1 */) **n.d.a.** ..... mg/kg Animal species .....

5.2 LD 50, dermal (2.6.2.1.2 */) **n.d.a.** ..... mg/kg Animal species .....

5.3 LC 50, inhalation (2.6.2.1.3 */) **n.d.a.** ... mg/litre Exposure time ..... hours
or ..... ml/m³ Animal species .....

5.4 Saturated vapour concentration at 20 °C (2.6.2.2.4.3 */) **n.a.** ..... ml/m³

5.5 Skin exposure (2.8 */) results Exposure time ..... hours/minutes
Animal species .....

5.6 Other data **Avoid contact with eyes, skin and clothing.** .....
Avoid inhalation. .....

5.7 Human experience .....
.....

Section 6. SUPPLEMENTARY INFORMATION

6.1 Recommended emergency action

6.1.1 Fire (include suitable and unsuitable extinguishing agents)
Suitable agents: water spray .....

6.1.2 Spillage **cover spilled substance with paper** .....

6.2 Is it proposed to transport the substance in :

6.2.1 Intermediate Bulk Containers (6.5*/) ? **yes/no**

6.2.2 Portable tanks (6.6*/) ? **yes/no**

If yes, give details in Sections 7 and/or 8.

Section 7. INTERMEDIATE BULK CONTAINERS (IBCs) (only complete if yes in 2.6.2.1.1)

7.1 Proposed type(s) .....

Section 8. MULTIMODAL TANK TRANSPORT (only complete if yes in 2.6.2.1.2)

8.1 Description of proposed tank (including IMO tank type if known) .....
.....

8.2 Minimum test pressure .....

8.3 Minimum shell thickness .....

8.4 Details of bottom openings, if any .....

8.5 Pressure relief arrangements .....

8.6 Degree of filling .....

8.7 Unsuitable construction materials .....

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*/ *This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.*

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agenda item 5(e))

MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Work of the Joint Meeting of the RID Safety Committee and the UN/ECE Working Party on the Transport of Dangerous Goods

Note by the Secretariat

In its work on the restructuring of the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) and the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), the "RID/ADR" Joint Meeting follows closely the structure of the UN Model Regulations. However, in certain instances, the Joint Meeting decided to deviate from the UN Recommendations, and it was agreed that certain deviations could be brought to the attention of the Sub-Committee.

Lay-out of the dangerous goods list in Chapter 3.2

The Joint Meeting decided that all columns concerning classification should be grouped together under a global heading "Classification".

Furthermore the Joint Meeting considered that it would be more user-friendly to replace the column indicating the subsidiary risks with a column indicating the code of the danger labels to be affixed, as the danger labels reflect the primary and the subsidiary risks.

The Joint Meeting also decided to include references to the relevant part, chapter or section under the title of each column.

Proposal:

In order to ensure the best possible consistency between the various regulations based on the UN Recommendations, the Secretariat proposes the following amendments to the Model Regulations:

1. Renumber column "(5)" (UN packing group) as column "(4)".

2. Add a general heading "Classification (see Part 2)" above column (1) (UN No), (2) (Name and description), (3) (Class or Division), (4) (UN packing group).

3. Renumber and rename column "(4) (subsidiary risk)" as column "(5) label(s) (see 5.2.2.)".

4. In column (6), add "(see 3.3)";
   In column (7), add "(see 3.4)";
   In column (8), add "(see 4.1)";
   In column (9), add "[(see 4.1)]";
   In column (10), add "(see 4.2)";
   In column (11), add "(see 4.2.4.3)".

5. Consequential amendments

   2.0.1.5 Delete the second sentence. Add a new paragraph 2.0.1.7 as follows:

   "2.0.1.7 When an article or substance is specifically listed by name in the Dangerous Goods List in Chapter 3.2, its class or division and, when applicable, its packing group are indicated in columns 3 and 4 of that list. The subsidiary risk(s), if any, may be deducted from column (5) where labels are required for the primary and subsidiary risks."

   3.2.1 Column (5) should be renumbered column (4).

The text for existing column (4) should be amended to read :

"Column (5) Labels" - This column contains the codes of the primary risk and subsidiary risk(s) labels to be affixed on a package in accordance with 5.2.2"

5.2.2.1.2 The first sentence should be amended to read:

"Each package containing dangerous goods shall bear the label(s) required in column (5) of the Dangerous Goods List of Chapter 3.2, unless otherwise indicated by a special provision."

In addition : Delete 5.2.2.1.3, 5.2.2.1.3.1, 5.2.2.1.4, 5.2.2.1.5, 5.2.2.1.9 (These paragraphs reflect principles which could be consolidated in explanatory material but which are either unnecessary in the Model Regulations or redundant with special provision).

Replace 5.2.2.1.10 with a new special provision applicable to UN 2814, UN 2900, and UN 3291.

5.3.1.1.2 The second sentence should be amended to read:

"Placards shall correspond to the labels required in column (5) of the Dangerous Goods List of Chapter 3.2, unless otherwise indicated by a special provision, for the goods contained in the transport unit except that: ..." (Remainder unchanged)

5.3.1.1.3 Delete the first sentence and the word "However" at the beginning of the remaining sentence.

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agenda item 5 (h))

MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Amendment to 2.4.2.3.2.4 (self-reactive substances)

Transmitted by the European Chemical Industry Council (CEFIC)

1. INTRODUCTION

During the seventeenth session the Committee, it was agreed that updates of tables on organic peroxides (2.5.3.2.4 and Packing instruction 521 and 522) and corresponding tables for self-reactives, should be submitted by co-ordinating organisations such as CEFIC and HMAC (see document ST/SG/AC.10/R391). Since a new formulation has become commercially available, there is a need to include this it in the relevant table.

2. PROPOSAL

CEFIC proposes to add in 2.4.2.3.2.4, List of currently assigned self-reactive substances, the following entry:

BEST COPY AVAILABLE

SELF-REACTIVE SUBSTANCE	Concentration (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	UN generic entry	Remarks
2,2'-AZODI(ISOBUTYRONITRILE) as a water based paste	≤50%	OP6			3224	

3. JUSTIFICATION

The test result of the Heat Accumulation Storage Test, as prescribed in the Manual of Tests and Criteria, Test H.4, showed that the Self Accelerating Decomposition Temperature (SADT) of the 2,2'-Azodi(isobutyronitrile), not more than 50%, is greater than 55 °C.

According to the United Nations Recommendations on the Transport of Dangerous Goods, 10th revised edition, paragraph 2.4.2.3.4, temperature control in transport is not required, because the SADT is >55 °C.

The SADT determination was performed by Health & Safety Laboratory, Buxton UK, and the test report is given in Annex 1 of this proposal.

Annex 1: Test report on the SADT determination of Azo-di(isobutyronitrile), wetted with not less than 50% water.

Harpur Hill, Buxton,
Derbyshire SK17 9JN
Telephone: 01298 [illegible]
Facsimile: 01298 [illegible]

HEALTH & SAFETY LABORATORY

HEAT ACCUMULATION STORAGE TEST REPORT

COMPANY ULTRASEAL Ltd.

SAMPLE Azo-di(isobutyronitrile) wetted with not less than 50% water

SAMPLE FORM Paste

PROCEDURE UN Test Series H Test H 4 Heat Accumulation Storage Test (United Nations Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria - *Second Revised Edition* 1995)

TEST CONDITIONS

Test temperature (°C)	56.0 ± 1.0
Dewar size (ml)	500
Dewar heat loss characteristics (mW/kg/K)	84.9
Sample mass (g)	380.7

TEST RESULTS

Lapse time for the sample to warm from ambient temperature to 2K below the test temperature (Hours : mins)	43:00
Lapse time for the sample to warm from ambient temperature to the test temperature (Hours : mins)	51:55
Maximum temperature recorded during 7 days at 56.0 + 1.0°C (K)	2.9
Lapse time for the sample to warm from 2K below the test temperature to the maximum recorded temperature (Hours : mins)	36:20
Lapse time for the sample to warm from the test temperature to the maximum recorded temperature (Hours : mins)	26:20

OVERALL RESULT

The self-accelerating decomposition temperature (SADT) of AZO-DI(ISOBUTYRONITRILE), WETTED with not less than 50% water, by mass, is greater than 55°C.

AZO-DI(ISOBUTYRONITRILE), WETTED with not less than 50% water, by mass, is not subject to temperature control in transport, as it does not meet the requirements of paragraph 2.4.2.3.4 of the United Nations Recommendations on the Transport of Dangerous Goods *Tenth Revised Edition* 1997 which states:

"Self-reactive substances are subject to temperature control in transport if their self-accelerating decomposition temperature (SADT) is less than or equal to 55°C."

Signed A K BROWN Dated: 28/06/97

An agency [illegible]